Chapter V

Results of Computation by Equations of State

In this work,the results of calculation are presented in tables.The accuracy of equations of state in computation of liquid molar volume,vapor molar volume,phase equilibrium compositions in individual phase are meassured in term of absolute error deviation which is defined as $|(cal-expt)*100/expt|$.Comparisons of experimental and predicted results by SRK,H&K,G&D and P&R equations of state as a function of pressure for individual phase are presented in figures . Two liquid-liquid-vapor equilibrium of ternary system are Methane+Ethane+n-Docosane and CO_2+N_2+n-Nonadecane.For Methane+Ethane+n-Docosane mixtures, comparisons of experimental and predicted results are shown at T=298.15 and 303.15 K and those of CO_2+N_2+n-Nonadecane mixtures are shown at T=294.15,297.15 and 301.15 K.

METHANE + ETHANE + n-DOCOSANE (TEMP=298.15 K) **Table 5.1**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 SRK EOS	ABS DEV(%)	C2 EXPT	C2 SRK EOS	ABS DEV(%)	C1 EXPT	C1 SRK EOS	ABS DEV(%)	C2 EXPT	C2 SRK EOS	ABS DEV(%)	C2 EXPT	C2 SRK EOS	ABS DEV(%)
46.8800	0.0262	0.0324	23.6641	0.9095	0.9197	1.1215	0.0352	0.0403	14.4886	0.9546	0.9460	0.9009	0.9325	0.9246	0.8472
47.9200	0.0304	0.0370	21.7105	0.9007	0.9132	1.3878	0.0426	0.0475	11.5023	0.9490	0.9410	0.8430	0.9217	0.9145	0.7812
48.9500	0.0345	0.0422	22.3188	0.8920	0.9052	1.4798	0.0497	0.0546	9.8592	0.9432	0.9336	1.0178	0.9111	0.9038	0.8012
49.9900	0.0381	0.0462	21.2598	0.8844	0.9004	1.8091	0.0573	0.0624	8.9005	0.9367	0.9293	0.7900	0.9018	0.8945	0.8095
51.0200	0.0415	0.0509	22.6506	0.8769	0.8938	1.9272	0.0649	0.0703	8.3205	0.9300	0.9226	0.7957	0.8929	0.8865	0.7168
52.0600	0.0450	0.0556	23.5556	0.8699	0.8874	2.0117	0.0723	0.0784	8.4371	0.9234	0.9155	0.8555	0.8847	0.8793	0.6104
53.0900	0.0486	0.0602	23.8683	0.8634	0.8814	2.0848	0.0805	0.0867	7.7019	0.9159	0.9082	0.8407	0.8780	0.8734	0.5239
54.1200	0.0529	0.0646	22.1172	0.8547	0.8751	2.3868	0.0883	0.0959	8.6070	0.9091	0.9002	0.9790	0.8723	0.8688	0.4012
55.1600	0.0564	0.0691	22.5177	0.8477	0.8689	2.5009	0.0976	0.1047	7.2746	0.9002	0.8921	0.8998	0.8683	0.8655	0.3225
AVG ABS DEV(%)			22.6292			1.8566			9.4546			0.8803			0.6460

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by S-R-K equation of state(k_{ij}=0) of Methane(1)+Ethane(2)+n-Docosane(3) system.

[Data from Jangkamolkulchai, A. and Luke, K.D. (1989).]

METHANE + ETHANE + n-DOCOSANE (TEMP=298.15 K) **Table 5.2**

L2-PHASE						V-PHASE			L1-PHASE					
C1 EXPT	C1 H&K EOS	ABS DEV(%)	C2 EXPT	C2 H&K EOS	ABS DEV(%)	C2 EXPT	C2 H&K EOS	ABS DEV(%)	C1 EXPT	C1 H&K EOS	ABS DEV(%)	C2 EXPT	C2 H&K EOS	ABS DEV(%)
0.0352	0.0312	11.3636	0.9546	0.9684	1.4456	0.9325	0.9297	0.3003	0.0262	0.0216	17.5573	0.9095	0.9543	4.9258
0.0426	0.0382	10.3286	0.9490	0.9615	1.3172	0.9217	0.9190	0.2929	0.0304	0.0252	17.1053	0.9007	0.9473	5.1738
0.0497	0.0436	12.2736	0.9432	0.9562	1.3783	0.9111	0.9130	0.2085	0.0345	0.0275	20.2899	0.8920	0.9434	5.7623
0.0573	0.0526	8.2024	0.9367	0.9473	1.1316	0.9018	0.9004	0.1552	0.0381	0.0320	16.0105	0.8844	0.9340	5.6083
0.0649	0.0601	7.3960	0.9300	0.9398	1.0538	0.8929	0.8924	0.0560	0.0415	0.0353	14.9398	0.8769	0.9276	5.7817
0.0723	0.0678	6.2241	0.9234	0.9322	0.9530	0.8847	0.8854	0.0791	0.0450	0.0385	14.4444	0.8699	0.9215	5.9317
0.0805	0.0758	5.8385	0.9159	0.9241	0.8953	0.8780	0.8797	0.1936	0.0486	0.0417	14.1975	0.8634	0.9156	6.0459
0.0883	0.0850	3.7373	0.9091	0.9150	0.6490	0.8723	0.8754	0.3554	0.0529	0.0446	15.6900	0.8547	0.9097	6.4350
0.0976	0.0937	3.9959	0.9002	0.9035	0.3666	0.8683	0.8719	0.4146	0.0564	0.0476	15.6028	0.8477	0.9035	6.5825
DEV(%)		7.7067			1.0212			0.2284			16.2042			5.8052

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by Harmens & Knapp equation of state(k_{ij}=0) of CO_2 (1)+N_2 (2)+n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

METHANE + ETHANE + n-DOCOSANE (TEMP=298.15 K) **Table 5.3**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 PR EOS	ABS DEV(%)	C2 EXPT	C2 PR EOS	ABS DEV(%)	C1 EXPT	C1 PR EOS	ABS DEV(%)	C2 EXPT	C2 PR EOS	ABS DEV(%)	C2 EXPT	C2 PR EOS	ABS DEV(%)
46.8800	0.0262	0.0343	30.9160	0.9095	0.9168	0.8026	0.0352	0.0422	19.8864	0.9546	0.9430	1.2152	0.9325	0.9189	1.4584
47.9200	0.0304	0.0392	28.9474	0.9007	0.9098	1.0103	0.0426	0.0497	16.6667	0.9490	0.9377	1.1907	0.9217	0.9091	1.3670
48.9500	0.0345	0.0440	27.5362	0.8920	0.9029	1.2220	0.0497	0.0572	15.0905	0.9432	0.9318	1.2087	0.9111	0.8998	1.2403
49.9900	0.0381	0.0488	28.0840	0.8844	0.8961	1.3229	0.0573	0.0650	13.4380	0.9367	0.9255	1.1957	0.9018	0.8913	1.1643
51.0200	0.0415	0.0535	28.9157	0.8769	0.8894	1.4255	0.0649	0.0729	12.3267	0.9300	0.9189	1.1935	0.8929	0.8834	1.0639
52.0600	0.0450	0.0582	29.3333	0.8699	0.8829	1.4944	0.0723	0.0809	11.8949	0.9234	0.9119	1.2454	0.8847	0.8763	0.9495
53.0900	0.0486	0.0629	29.4239	0.8634	0.8767	1.5404	0.0805	0.0892	10.8075	0.9159	0.9047	1.2228	0.8780	0.8704	0.8656
54.1200	0.0529	0.0659	24.5747	0.8547	0.8695	1.7316	0.0883	0.0989	12.0045	0.9091	0.8962	1.4190	0.8723	0.8650	0.8369
55.1600	0.0564	0.0719	27.4823	0.8477	0.8638	1.8993	0.0976	0.1072	9.8361	0.9002	0.8888	1.2664	0.8683	0.8623	0.6910
AVG ABS DEV(%)			28.3570			1.3832			13.5501			1.2397			1.0708

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by PR equation of state(k_{ij}=0) of Methane(1)+Ethane(2)+n-Docosane(3) system.

[Data from Jangkamolkulchai, A. and Luke, K. D. (1989).]

METHANE + ETHANE + n-DOCOSANE (TEMP=298.15 K) **Table 5.4**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 G&D	ABS DEV(%)	C2 EXPT	C2 G&D	ABS DEV(%)	C1 EXPT	C1 G&D	ABS DEV(%)	C2 EXPT	C2 G&D	ABS DEV(%)	C2 EXPT	C2 G&D	ABS DEV(%)
46.8800	0.0262	0.0316	20.6107	0.9095	0.9207	1.2314	0.0352	0.0394	11.9318	0.9546	0.9469	0.8066	0.9325	0.9230	1.0188
47.9200	0.0304	0.0365	20.0658	0.9007	0.9139	1.4655	0.0426	0.0469	10.0939	0.9490	0.9417	0.7692	0.9217	0.9129	0.9548
48.9500	0.0345	0.0414	20.0000	0.8920	0.9069	1.6704	0.0497	0.0546	9.8592	0.9432	0.9355	0.8164	0.9111	0.9044	0.7354
49.9900	0.0381	0.0461	20.9974	0.8844	0.9006	1.8318	0.0573	0.0622	8.5515	0.9367	0.9294	0.7793	0.9018	0.8946	0.7984
51.0200	0.0415	0.0507	22.1687	0.8769	0.8940	1.9501	0.0649	0.0701	8.0123	0.9300	0.9228	0.7742	0.8929	0.8866	0.7056
52.0600	0.0450	0.0554	23.1111	0.8699	0.8877	2.0462	0.0723	0.0782	8.1604	0.9234	0.9157	0.8339	0.8847	0.8793	0.6104
53.0900	0.0486	0.0600	23.4568	0.8634	0.8816	2.1079	0.0805	0.0865	7.4534	0.9159	0.9084	0.8189	0.8780	0.8735	0.5125
54.1200	0.0529	0.0644	21.7391	0.8547	0.8754	2.4219	0.0883	0.0957	8.3805	0.9091	0.9004	0.9570	0.8723	0.8689	0.3898
55.1600	0.0564	0.0688	21.9858	0.8477	0.8692	2.5363	0.0976	0.1045	7.0697	0.9002	0.8923	0.8776	0.8683	0.8655	0.3225
AVG ABS DEV(%)			21.5706			1.9179			8.8347			0.8259			0.6720

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by G&D equation of state(k_{ij}=0) of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A.and Luke,K.D.(1989).]

Table 5.5 METHANE + ETHANE + n-DOCOSANE T=298.15 K

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)
46.8800	89.3000	110.9000	24.1881	86.8000	102.2000	17.7419	229.9000	247.4000	7.6120
47.9200	90.2000	112.5000	24.7228	88.0000	102.4000	16.3636	221.3000	236.6000	6.9137
48.9500	91.0000	114.1000	25.3846	89.1000	102.7000	15.2637	213.3000	217.1000	1.7815
49.9900	92.2000	115.5000	25.2711	90.3000	105.8000	17.1650	205.2000	216.6000	5.5556
51.0200	93.5000	116.9000	25.0267	91.5000	107.1000	17.0492	197.5000	206.7000	4.6582
52.0600	94.4000	118.2000	25.2119	93.1000	108.6000	16.6488	188.8000	196.6000	4.1314
53.0900	95.3000	119.2000	25.0787	95.2000	110.3000	15.8613	179.8000	185.3000	3.0590
54.1200	96.4000	120.9000	25.4149	97.1000	112.9000	16.2719	169.7000	173.8000	2.4160
55.1600	97.3000	122.2000	25.5910	100.4000	114.9000	14.4422	159.1000	161.6000	1.5713
AVG ABS DEV(%)			25.0989			16.3120			4.1887

Comparisons of experimental and predicted molar volume by S-R-K equation of state(k_{ij}=0) as a function of pressure for V-L'-L'' phases of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

Table 5.6 METHANE + ETHANE + n-DOCOSANE T=298.15 K

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)
46.8800	89.3000	86.3000	3.3595	86.8000	84.7000	2.4194	229.9000	229.2000	0.3045
47.9200	90.2000	87.4000	3.1042	88.0000	86.4000	1.8182	221.3000	219.4000	0.8586
48.9500	91.0000	88.8000	2.4176	89.1000	87.9000	1.3468	213.3000	209.0000	2.0159
49.9900	92.2000	89.6000	2.8200	90.3000	89.6000	0.7752	205.2000	201.0000	2.0468
51.0200	93.5000	90.6000	3.1016	91.5000	91.3000	0.2186	197.5000	192.0000	2.7848
52.0600	94.4000	91.6000	2.9661	93.1000	93.1000	0.0000	188.8000	182.8000	3.1780
53.0900	95.3000	92.3000	3.1480	95.2000	95.2000	0.0000	179.8000	172.5000	4.0601
54.1200	96.4000	93.5000	3.0083	97.1000	98.7000	1.6478	169.7000	162.1000	4.4785
55.1600	97.3000	94.5000	2.8777	100.4000	101.0000	0.5976	159.1000	151.0000	5.0911
AVG ABS DEV(%)			2.9781			0.9804			2.7576

Comparisons of experimental and predicted molar volume by Harmens & Knapp equation of state(k_{ij} =0) as a function of pressure for V-L'-L'' phases of Methane(1)+Ethane(2)+n-Docosane(3) system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

Table 5.7 METHANE + ETHANE + n-DOCOSANE T=298.15 K

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)
46.8800	89.3000	99.3000	11.1982	86.8000	92.2000	6.2212	229.9000	233.4000	1.5224
47.9200	90.2000	100.7000	11.6408	88.0000	93.3000	6.0227	221.3000	222.3000	0.4519
48.9500	91.0000	102.1000	12.1978	89.1000	94.5000	6.0606	213.3000	213.2000	0.0469
49.9900	92.2000	103.4000	12.1475	90.3000	95.8000	6.0908	205.2000	203.2000	0.9747
51.0200	93.5000	104.7000	11.9786	91.5000	97.1000	6.1202	197.5000	193.9000	1.8228
52.0600	94.4000	105.8000	12.0763	93.1000	98.6000	5.9076	188.8000	184.4000	2.3305
53.0900	95.3000	106.7000	11.9622	95.2000	100.3000	5.3571	179.8000	173.8000	3.3370
54.1200	96.4000	109.1000	13.1743	97.1000	102.9000	5.9732	169.7000	163.1000	3.8892
55.1600	97.3000	109.3000	12.3330	100.4000	104.9000	4.4821	159.1000	151.2000	4.9654
AVG ABS DEV(%)			12.0787			5.8040			2.1490

Comparisons of experimental and predicted molar volume by PR equation of state(k_{ij}=0) as a function of pressure for V-L^{I}-L^{II} phases of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

Table 5.8 METHANE + ETHANE + n-DOCOSANE T=298.15 K

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)
46.9800	89.3000	110.9000	24.1881	86.8000	102.2000	17.7419	229.9000	247.5000	7.6555
47.9200	90.2000	112.5000	24.7228	88.0000	103.3000	17.3864	221.3000	236.7000	6.9589
48.9500	91.0000	114.1000	25.3846	89.1000	104.5000	17.2840	213.3000	222.1000	4.1256
49.9900	92.2000	115.5000	25.2711	90.3000	105.8000	17.1650	205.2000	216.8000	5.6530
51.0200	93.5000	116.9000	25.0267	91.5000	107.2000	17.1585	197.5000	206.9000	4.7595
52.0600	94.4000	118.2000	25.2119	93.1000	108.6000	16.6488	188.8000	196.8000	4.2373
53.0900	95.3000	119.2000	25.0787	95.2000	110.3000	15.8613	179.8000	185.6000	3.2258
54.1200	96.4000	120.9000	25.4149	97.1000	113.0000	16.3749	169.7000	174.2000	2.6517
55.1600	97.3000	122.1000	25.4882	100.4000	115.0000	14.5418	159.1000	162.0000	1.8228
AVG ABS DEV(%)			25.0875			16.6847			4.5656

Comparisons of experimental and predicted molar volume by G&D equation of state(k_{ij}=0) as a function of pressure for V-L^{I}-L^{II} phases of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

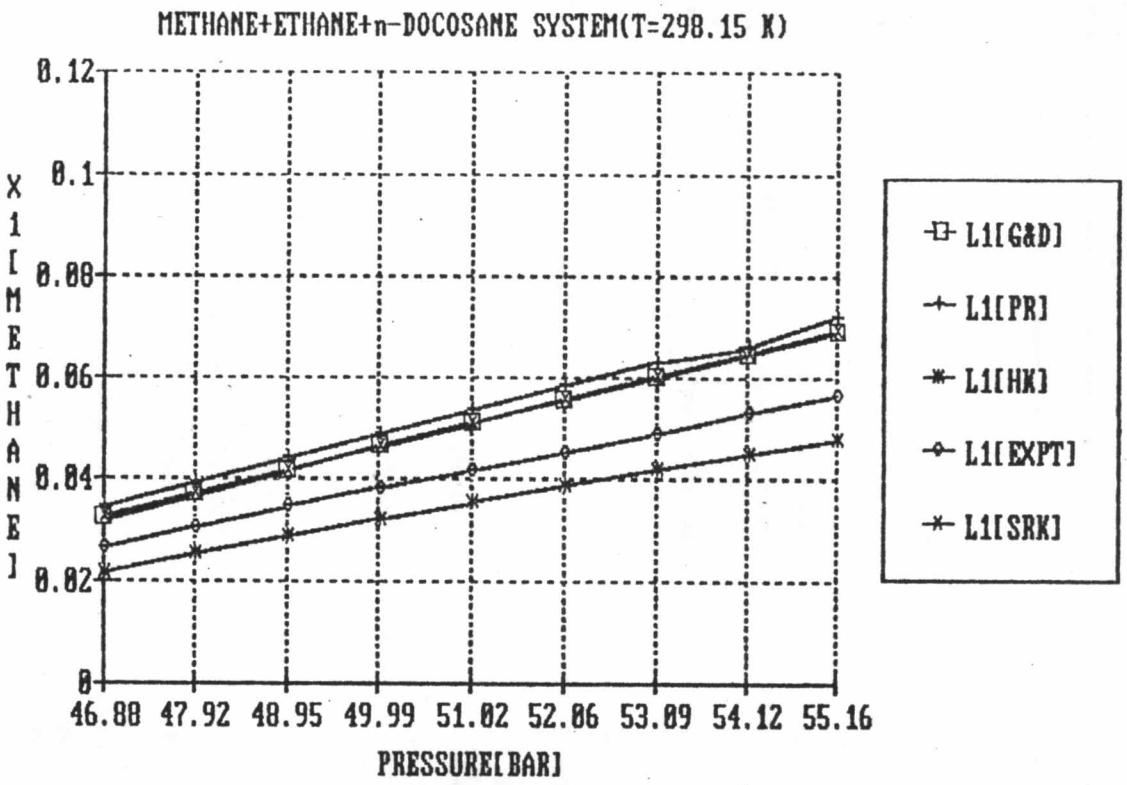

Figure 5.1 Comparisons of experimental and predicted mthane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{I} phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

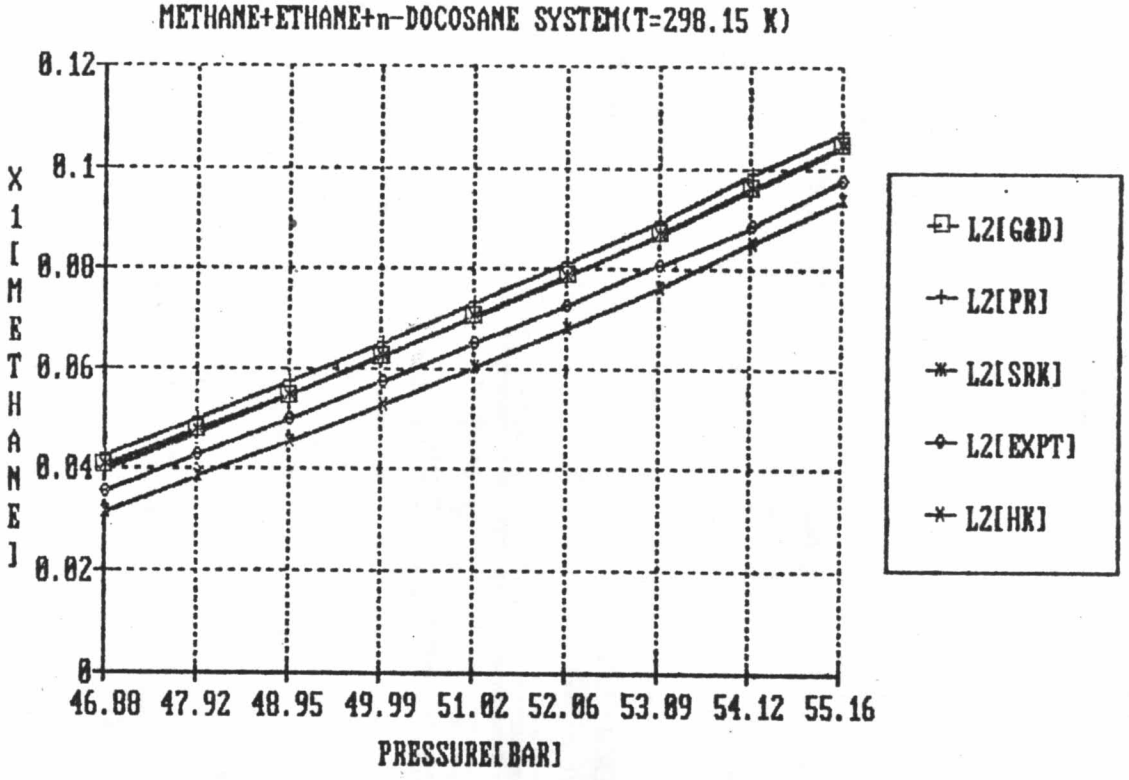

Figure 5.2 Comparisons of experimental and predicted Methane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of Methane(1)+Ethane (2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

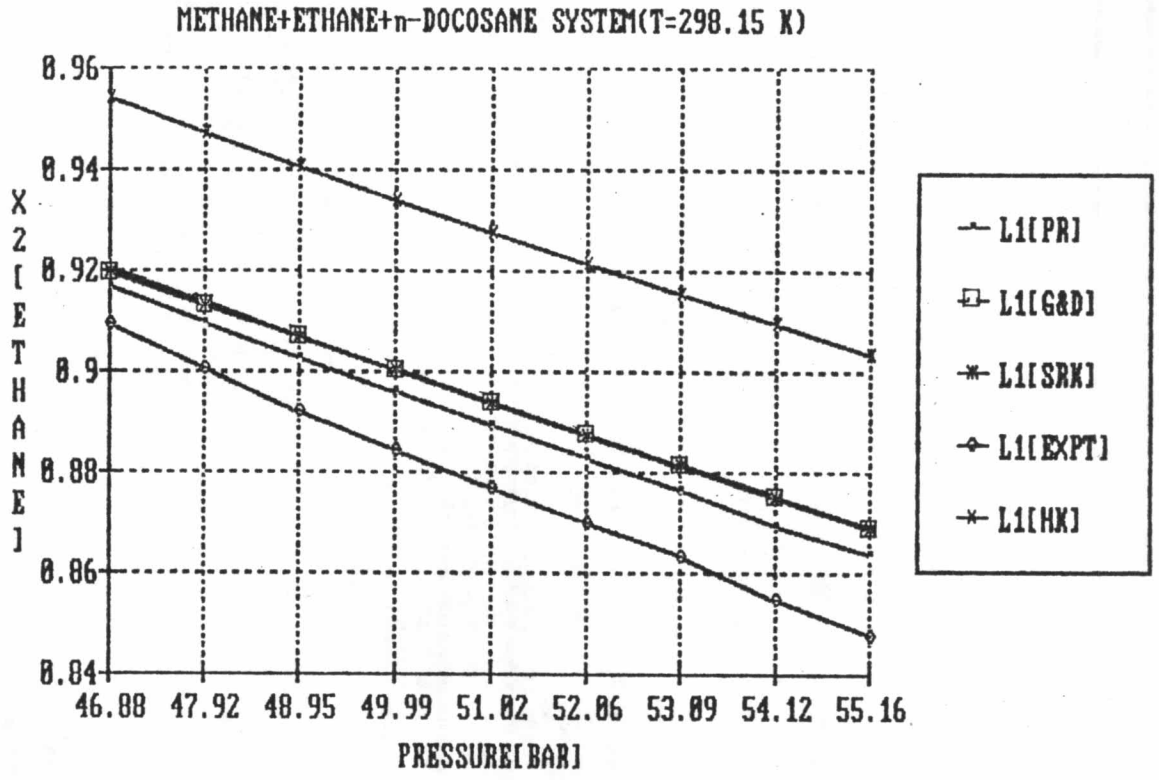

Figure 5.3 Comparisons of experimental and predicted ethane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{1} phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

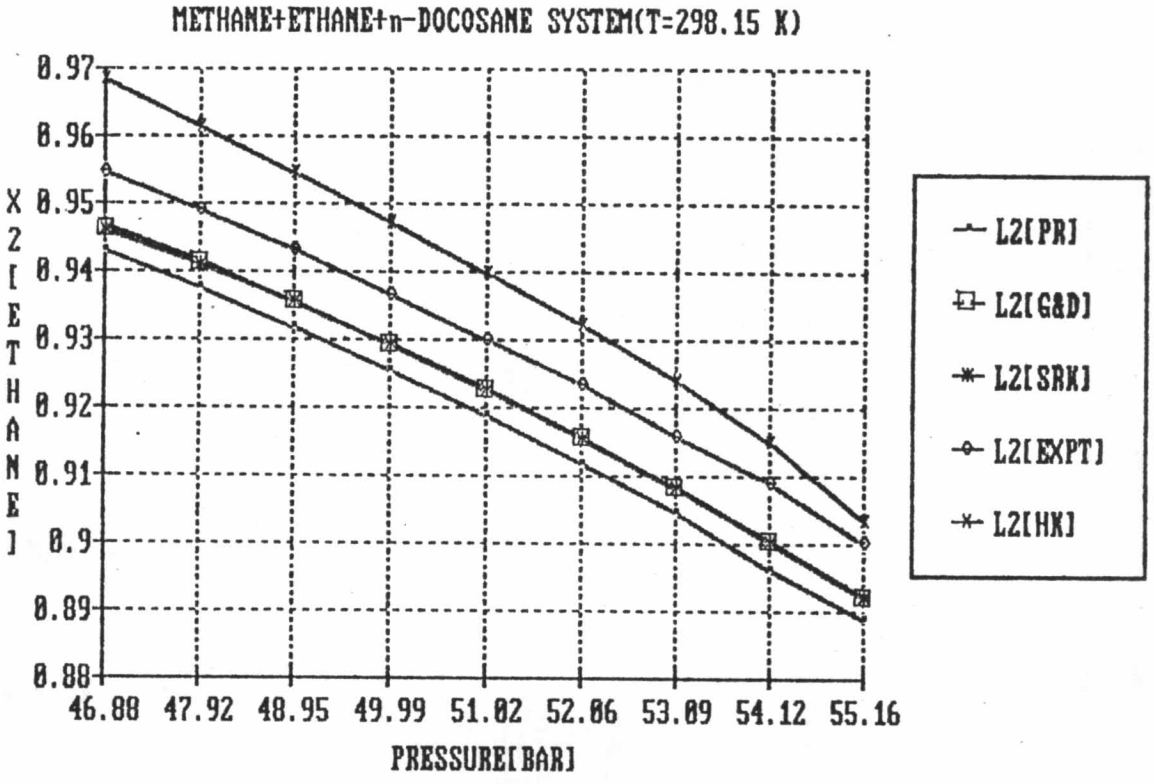

Figure 5.4 Comparisons of experimental and predicted ethane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

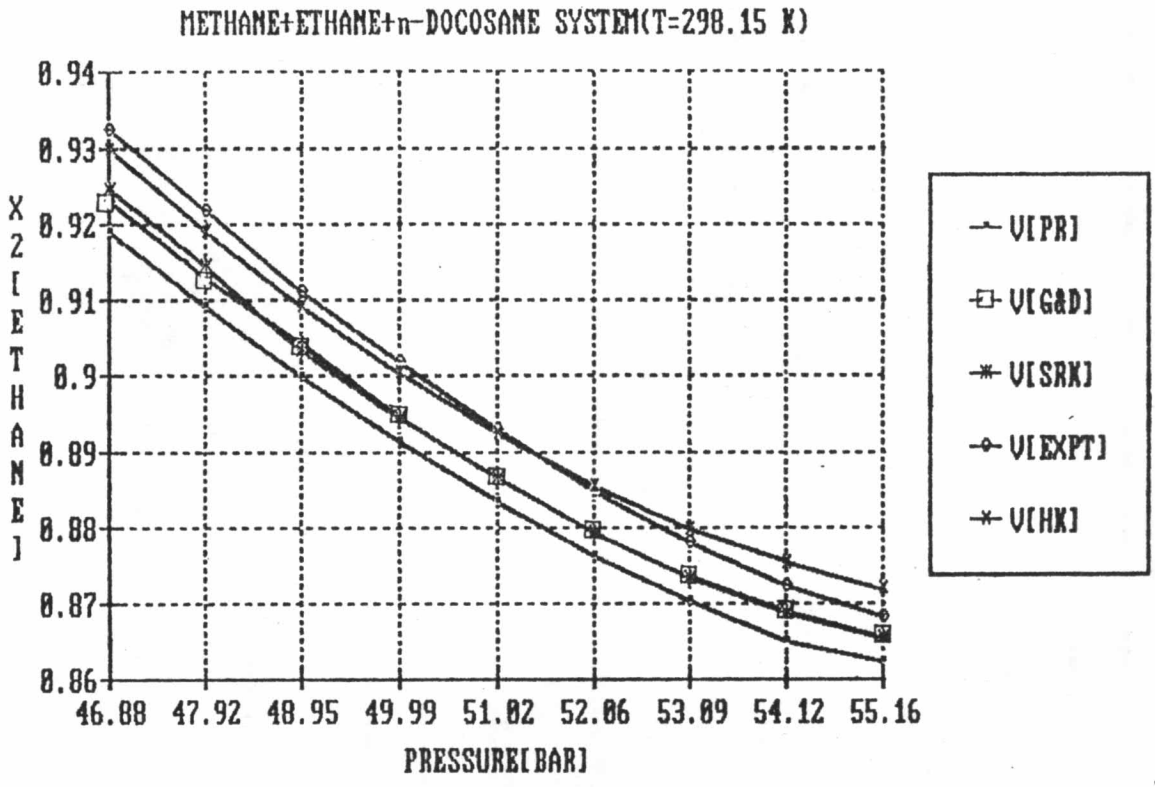

Figure 5.5 Comparisons of experimental and predicted ethane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of Methane(1)+Ethane(2)+n-Docosane(3)system.[Data from Jangkamolkulchai, A. and Luke,K.D.(1989).]

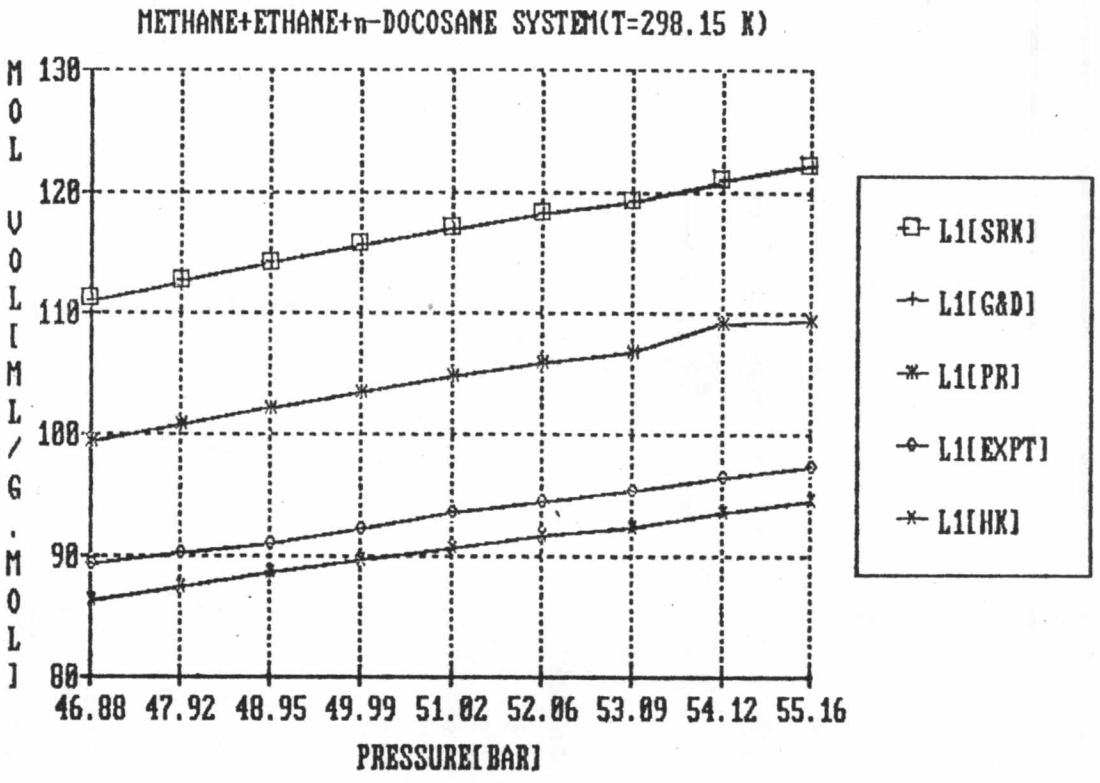

Figure 5.6 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L' phase of Methane(1)+Ethane (2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

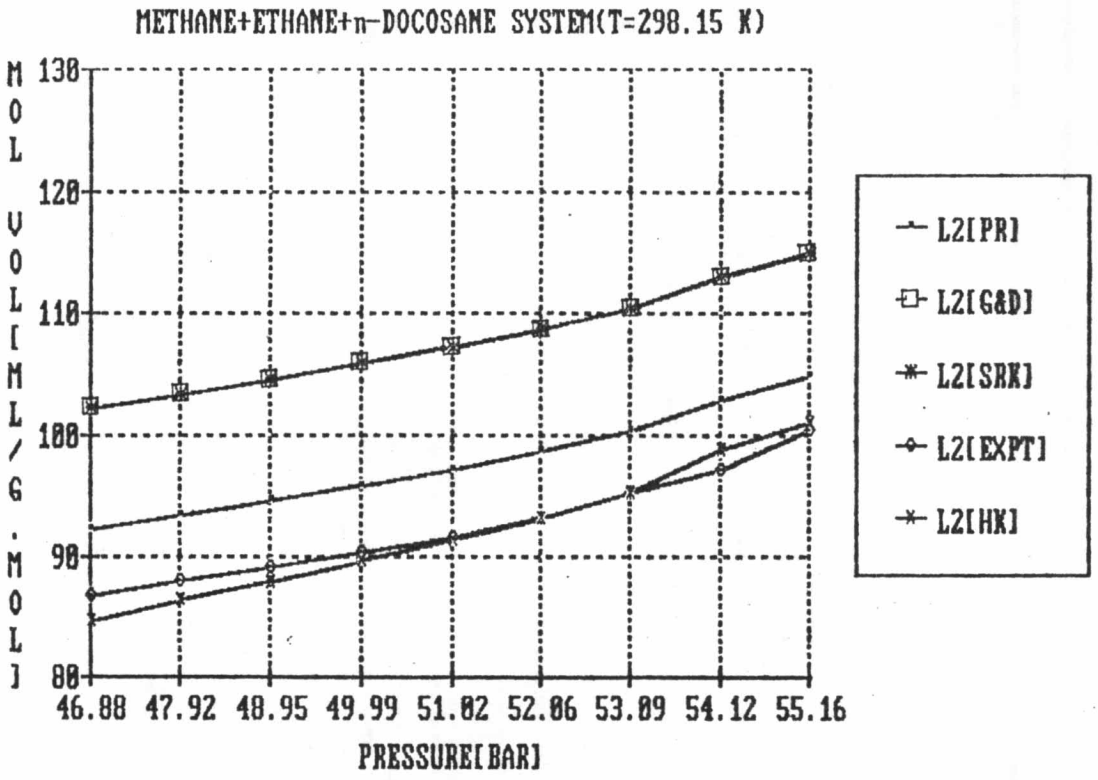

Figure 5.7 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{II} phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

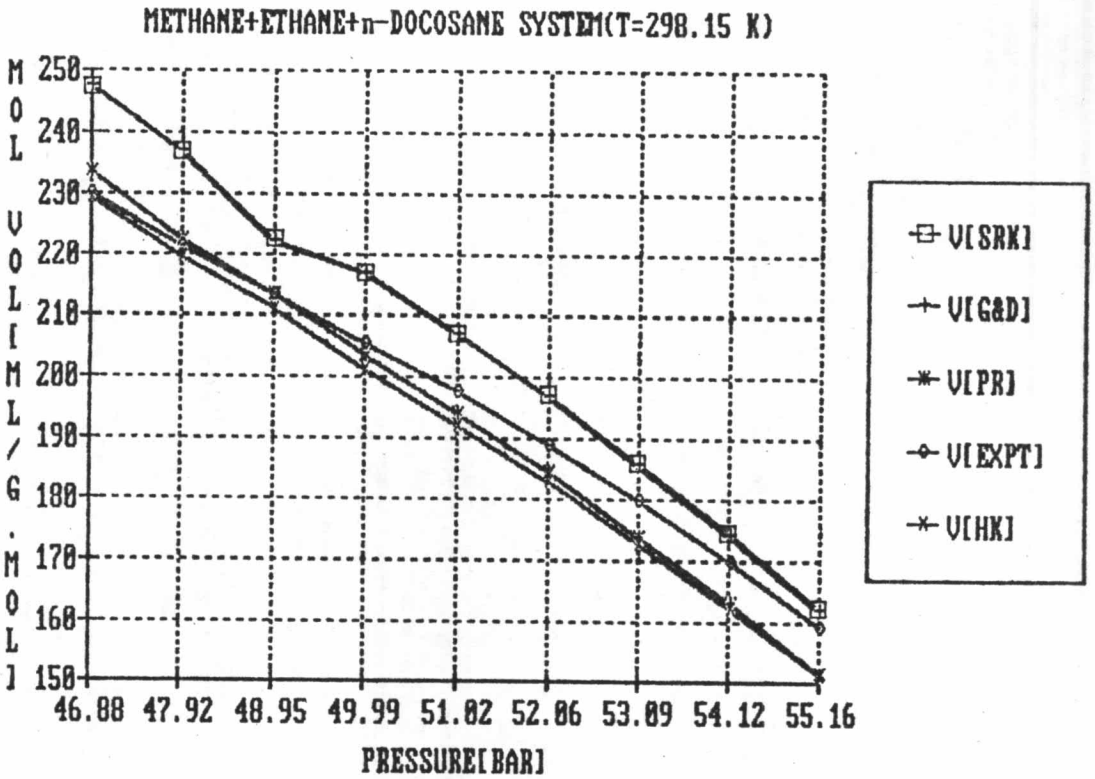

Figure 5.8 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

METHANE + ETHANE + n-DOCOSANE (T=303.15 K) **Table 5.9**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 SRK EOS	ABS DEV(%)	C2 EXPT	C2 SRK EOS	ABS DEV(%)	C1 EXPT	C1 SRK EOS	ABS DEV(%)	C2 EXPT	C2 SRK EOS	ABS DEV(%)	C2 EXPT	C2 SRK EOS	ABS DEV(%)
47.3500	0.0053	0.0076	43.3962	0.9252	0.9422	1.8374	0.0092	0.0102	10.8696	0.9837	0.9810	0.2745	0.9871	0.9823	0.4863
47.9200	0.0077	0.0104	35.0649	0.9204	0.9383	1.9448	0.0129	0.0141	9.3023	0.9807	0.9779	0.2855	0.9806	0.9762	0.4487
48.6100	0.0106	0.0137	29.2453	0.9145	0.9336	2.0886	0.0173	0.0189	9.2486	0.9771	0.9741	0.3070	0.9723	0.9690	0.3394
49.1000	0.0126	0.0160	26.9841	0.9108	0.9305	2.1629	0.0202	0.0224	10.8911	0.9747	0.9712	0.3591	0.9677	0.9643	0.3513
49.6400	0.0147	0.0186	26.5306	0.9068	0.9269	2.2166	0.0236	0.0263	11.4407	0.9717	0.9678	0.4014	0.9625	0.9592	0.3429
50.1900	0.0168	0.0212	26.1905	0.9026	0.9233	2.2934	0.0271	0.0303	11.8081	0.9686	0.9642	0.4543	0.9573	0.9543	0.3134
51.0200	0.0199	0.0250	25.6281	0.8965	0.9180	2.3982	0.0331	0.0367	10.8761	0.9634	0.9589	0.4671	0.9506	0.9478	0.2946
51.7100	0.0225	0.0281	24.8889	0.8916	0.9137	2.4787	0.0382	0.0420	9.9476	0.9588	0.9542	0.4798	0.9453	0.9428	0.2645
52.4300	0.0252	0.0313	24.2063	0.8867	0.9093	2.5488	0.0436	0.0478	9.6330	0.9539	0.9491	0.5032	0.9404	0.9381	0.2446
AVG ABS DEV(%)			29.1261			2.2188			10.4463			0.3924			0.3428

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by S-R-K equation of state(k_{ij}=0) of Methane(1)+Ethane(2)+n-Docosane(3) system.

[Data from Jangkamolkulchai, A. and Luke, K.D. (1989).]

METHANE + ETHANE + n-DOCOSANE (T=303.15 K) **Table 5.10**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 H&K EOS	ABS DEV(%)	C2 EXPT	C2 H&K EOS	ABS DEV(%)	C1 EXPT	C1 H&K EOS	ABS DEV(%)	C2 EXPT	C2 H&K EOS	ABS DEV(%)	C2 EXPT	C2 H&K EOS	ABS DEV(%)
47.3500	0.0053	0.0028	47.1698	0.9252	0.9630	4.0856	0.0092	0.0045	51.0870	0.9837	0.9953	1.1792	0.9871	0.9912	0.4154
47.9200	0.0077	0.0049	36.3636	0.9204	0.9589	4.1830	0.0129	0.0080	37.9845	0.9807	0.9918	1.1318	0.9806	0.9848	0.4283
48.6100	0.0106	0.0074	30.1887	0.9145	0.9541	4.3302	0.0173	0.0124	28.3237	0.9771	0.9874	1.0541	0.9723	0.9773	0.5142
49.1000	0.0126	0.0091	27.7778	0.9108	0.9510	4.4137	0.0202	0.0156	22.7723	0.9747	0.9843	0.9849	0.9677	0.9725	0.4960
49.6400	0.0147	0.0109	25.8503	0.9068	0.9476	4.4993	0.0236	0.0190	19.4915	0.9717	0.9809	0.9468	0.9625	0.9674	0.5091
50.1900	0.0168	0.0127	24.4048	0.9026	0.9441	4.5978	0.0271	0.0226	16.6052	0.9686	0.9773	0.8982	0.9573	0.9625	0.5432
51.0200	0.0199	0.0154	22.6131	0.8965	0.9387	4.7072	0.0331	0.0286	13.5952	0.9634	0.9714	0.8304	0.9506	0.9556	0.5260
51.7100	0.0225	0.0177	21.3333	0.8916	0.9344	4.8004	0.0382	0.0336	12.0419	0.9588	0.9664	0.7927	0.9453	0.9504	0.5395
52.4300	0.0252	0.0200	20.6349	0.8867	0.9302	4.9058	0.0436	0.0391	10.3211	0.9539	0.9609	0.7338	0.9404	0.9455	0.5423
AVG ABS DEV(%)			28.4818			4.5026			23.5803			0.9502			0.5016

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by Harmens & Knapp equation of state(k_{ij}=0)of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A.and Luke,K.D.(1989).]

METHANE + ETHANE + n-DOCOSANE (T=303.15 K) **Table 5.11**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 PR EOS	ABS DEV(%)	C2 EXPT	C2 PR EOS	ABS DEV(%)	C1 EXPT	C1 PR EOS	ABS DEV(%)	C2 EXPT	C2 PR EOS	ABS DEV(%)	C2 EXPT	C2 PR EOS	ABS DEV(%)
47.3500	0.0053	0.0097	83.0189	0.9252	0.9390	1.4916	0.0092	0.0127	38.0435	0.9837	0.9774	0.6404	0.9871	0.9781	0.9118
47.9200	0.0077	0.0124	61.0390	0.9204	0.9351	1.5971	0.0129	0.0166	28.6822	0.9807	0.9744	0.6424	0.9806	0.9722	0.8566
48.6100	0.0106	0.0157	48.1132	0.9145	0.9304	0.9304	0.0173	0.0213	23.1214	0.9771	0.9707	0.6550	0.9723	0.9654	0.7097
49.1000	0.0126	0.0180	42.8571	0.9108	0.9272	1.8006	0.0202	0.0249	23.2673	0.9747	0.9678	0.7079	0.9677	0.9607	0.7234
49.6400	0.0147	0.0206	40.1361	0.9068	0.9235	1.8416	0.0236	0.0288	22.0339	0.9717	0.9644	0.7513	0.9625	0.9557	0.7065
50.1900	0.0168	0.0232	38.0952	0.9026	0.9198	1.9056	0.0271	0.0328	21.0332	0.9686	0.9608	0.8053	0.9573	0.9509	0.6685
51.0200	0.0199	0.0271	36.1809	0.8965	0.9144	1.9967	0.0331	0.0391	18.1269	0.9634	0.9556	0.8096	0.9506	0.9445	0.6417
51.7100	0.0225	0.0302	34.2222	0.8916	0.9100	2.0637	0.0382	0.0445	16.4921	0.9588	0.9509	0.8239	0.9453	0.9395	0.6136
52.4300	0.0252	0.0335	32.9365	0.8867	0.9055	2.1202	0.0436	0.0503	15.3670	0.9539	0.9459	0.8387	0.9404	0.9348	0.5955
AVG ABS DEV(%)			46.2888			1.7497			22.9075			0.7416			0.7141

Comparisons of experimental and predicted molar volume by PR equation of state(k_{ij}=0) as a function of pressure for V-L'-L'' phases of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

METHANE + ETHANE + n-DOCOSANE (T=303.15 K) **Table 5.12**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	C1 EXPT	C1 G&D EOS	ABS DEV(%)	C2 EXPT	C2 G&D EOS	ABS DEV(%)	C1 EXPT	C1 G&D EOS	ABS DEV(%)	C2 EXPT	C2 G&D EOS	ABS DEV(%)	C2 EXPT	C2 G&D EOS	ABS DEV(%)
47.3500	0.0053	0.0076	43.3962	0.9252	0.9422	1.8374	0.0092	0.0101	9.7826	0.9837	0.9810	0.2745	0.9871	0.9823	0.4863
47.9200	0.0077	0.0103	33.7662	0.9204	0.9383	1.9448	0.0129	0.0140	8.5271	0.9807	0.9780	0.2753	0.9806	0.9763	0.4385
48.6100	0.0106	0.0136	28.3019	0.9145	0.9337	2.0995	0.0173	0.0188	8.6705	0.9771	0.9742	0.2968	0.9723	0.9691	0.3291
49.1000	0.0126	0.0159	26.1905	0.9108	0.9305	2.1629	0.0202	0.0223	10.3960	0.9747	0.9713	0.3488	0.9677	0.9644	0.3410
49.6400	0.0147	0.0185	25.8503	0.9068	0.9270	2.2276	0.0236	0.0262	11.0169	0.9717	0.9679	0.3911	0.9625	0.9593	0.3325
50.1900	0.0168	0.0211	25.5952	0.9026	0.9234	2.3045	0.0271	0.0302	11.4391	0.9686	0.9644	0.4336	0.9573	0.9544	0.3029
51.0200	0.0199	0.0249	25.1256	0.8965	0.9181	2.4094	0.0331	0.0365	10.2719	0.9634	0.9590	0.4567	0.9506	0.9479	0.2840
51.7100	0.0225	0.0280	24.4444	0.8916	0.9138	2.4899	0.0382	0.0419	9.6859	0.9588	0.9543	0.4693	0.9453	0.9429	0.2539
52.4300	0.0252	0.0312	23.8095	0.8867	0.9095	2.5713	0.0436	0.0476	9.1743	0.9539	0.9492	0.4927	0.9404	0.9382	0.2339
AVG ABS DEV(%)			28.4978			2.2275			9.8849			0.3821			0.3336

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by G&D equation of state(k_{ij}=0) of Methane(1) +Ethane(2)+n-Docosane(3) system.

[Data from Jangkamolkulchai, A. and Luke, K.D. (1989).]

Table 5.13 METHANE + ETHANE + n-DOCOSANE (T=303.15 K)

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)
47.3500	92.1000	114.6000	24.4300	90.2000	109.1000	20.9534	215.4000	227.0000	5.3853
47.9200	92.7000	115.4000	24.4876	91.1000	110.1000	20.8562	210.3000	221.3000	5.2306
48.6100	93.2000	116.4000	24.8927	92.2000	111.3000	20.7158	203.9000	216.2000	6.0324
49.1000	93.7000	117.0000	24.8666	93.1000	112.2000	20.5156	197.0000	209.9000	6.5482
49.6400	94.1000	117.7000	25.0797	94.0000	113.0000	20.2128	192.5000	203.7000	5.8182
50.1900	94.6000	118.4000	25.1586	95.1000	113.9000	19.7687	187.6000	197.6000	5.3305
51.0200	95.3000	119.5000	25.3935	97.1000	116.1000	19.5675	180.0000	186.2000	3.4444
51.7100	95.9000	120.3000	25.4432	99.3000	117.8000	18.6304	173.3000	177.5000	2.4235
52.4300	96.2000	121.0000	25.7796	102.1000	119.9000	17.4339	166.3000	168.8000	1.5033
AVG ABS DEV(%)			25.0590			19.8505			4.6352

Comparisons of experimental and predicted molar volume by S-R-K equation of state(k_{ij}=0) as a function of pressure for V-L'-L'' phases of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

Table 5.14 METHANE + ETHANE + n-DOCOSANE (T=303.15 K)

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)
47.3500	92.1000	88.9000	3.4745	90.2000	91.6000	1.5521	215.4000	209.5000	2.7391
47.9200	92.7000	89.5000	3.4520	91.1000	92.7000	1.7563	210.3000	204.6000	2.7104
48.6100	93.2000	90.2000	3.2189	92.2000	94.3000	2.2777	203.9000	201.2000	1.3242
49.1000	93.7000	90.6000	3.3084	93.1000	95.4000	2.4705	197.0000	195.4000	0.8122
49.6400	94.1000	91.1000	3.1881	94.0000	96.4000	2.5532	192.5000	190.0000	1.2987
50.1900	94.6000	91.6000	3.1712	95.1000	97.5000	2.5237	187.6000	185.0000	1.3859
51.0200	95.3000	92.4000	3.0430	97.1000	100.2000	3.1926	180.0000	175.1000	2.7222
51.7100	95.9000	93.0000	3.0240	99.3000	102.3000	3.0211	173.3000	167.8000	3.1737
52.4300	96.2000	93.6000	2.7027	102.1000	104.9000	2.7424	166.3000	160.2000	3.6681
AVG ABS DEV(%)			3.1759			2.4544			2.2038

Comparisons of experimental and predicted molar volume by Harmens & Knapp equation of state(k_{ij} =0) as a function of pressure for V-L^{I}-L^{II} phases of Methane(1)+Ethane(2)+n-Docosane(3) system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

Table 5.15 METHANE + ETHANE + n-DOCOSANE (T=303.15 K)

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)
47.3500	92.1000	102.7000	11.5092	90.2000	98.9000	9.6452	215.4000	212.3000	1.4392
47.9200	92.7000	103.4000	11.5426	91.1000	99.9000	9.6597	210.3000	206.9000	1.6167
48.6100	93.2000	104.3000	11.9099	92.2000	101.1000	9.6529	203.9000	202.3000	0.7847
49.1000	93.7000	104.8000	11.8463	93.1000	102.0000	9.5596	197.0000	196.3000	0.3553
49.6400	94.1000	105.4000	12.0085	94.0000	102.7000	9.2553	192.5000	190.6000	0.9870
50.1900	94.6000	106.0000	12.0507	95.1000	103.6000	8.9380	187.6000	185.0000	1.3859
51.0200	95.3000	107.0000	12.2770	97.1000	105.8000	8.9598	180.0000	174.6000	3.0000
51.7100	95.9000	107.7000	12.3045	99.3000	107.5000	8.2578	173.3000	166.7000	3.8084
52.4300	96.2000	108.4000	12.6819	102.1000	109.6000	7.3457	166.3000	158.4000	4.7505
AVG ABS DEV(%)			12.0145			9.0305			2.0142

Comparisons of experimental and predicted molar volume by PR equation of state(k_{ij}=0) as a function of pressure for V-L'-L'' phases of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

Table 5.16 METHANE + ETHANE + n-DOCOSANE (T=303.15 K)

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)
47.3500	92.1000	114.6000	24.4300	90.2000	109.1000	20.9534	215.4000	227.1000	5.4318
47.9200	92.7000	115.4000	24.4876	91.1000	110.1000	20.8562	210.3000	221.4000	5.2782
48.6100	93.2000	116.4000	24.8927	92.2000	111.4000	20.8243	203.9000	216.4000	6.1305
49.1000	93.7000	117.0000	24.8666	93.1000	112.2000	20.5156	197.0000	210.1000	6.6497
49.6400	94.1000	117.7000	25.0797	94.0000	113.0000	20.2128	192.5000	203.9000	5.9221
50.1900	94.6000	118.4000	25.1586	95.1000	113.9000	19.7687	187.6000	197.9000	5.4904
51.0200	95.3000	119.4000	25.2886	97.1000	116.1000	19.5675	180.0000	186.6000	3.6667
51.7100	95.9000	120.3000	25.4432	99.3000	117.9000	18.7311	173.3000	178.0000	2.7121
52.4300	96.2000	121.0000	25.7796	102.1000	119.9000	17.4339	166.3000	169.2000	1.7438
AVG ABS DEV(%)			25.0474			19.8737			4.7806

Comparisons of experimental and predicted molar volume by G&D equation of state(k_{ij}=0) as a function of pressure for V-L'-L'' phases of Methane(1)+Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

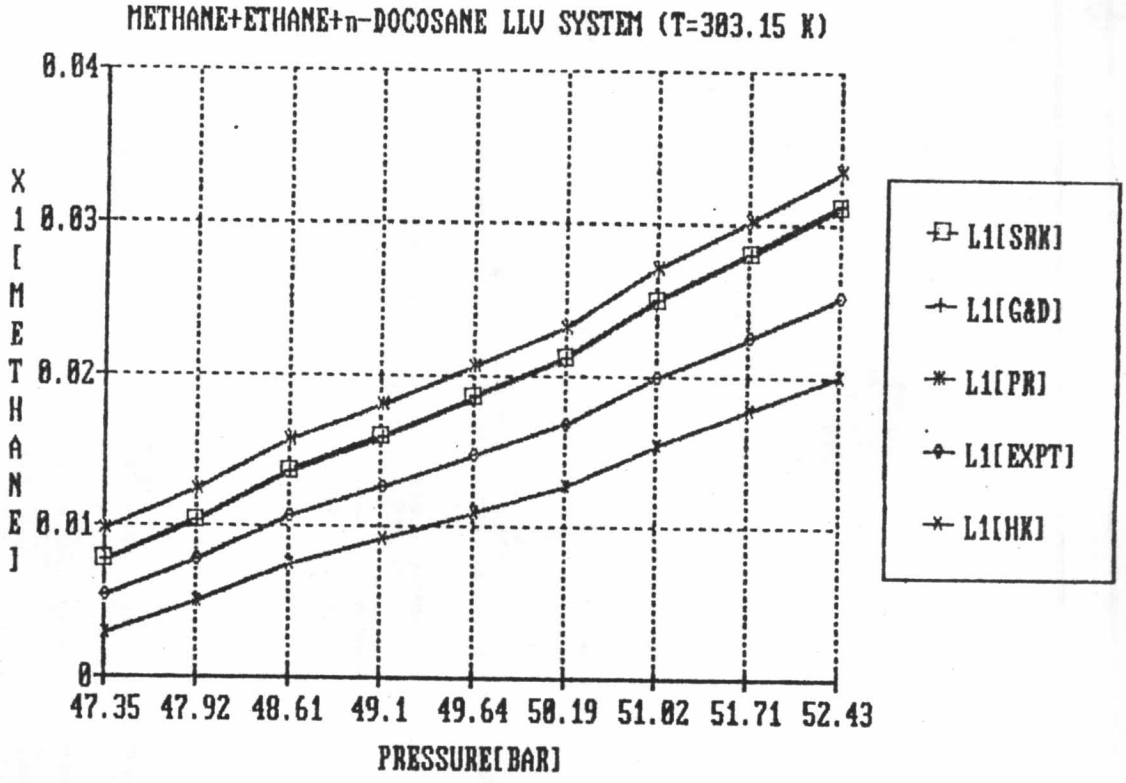

Figure 5.9 Comparisons of experimental and predicted mthane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L' phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

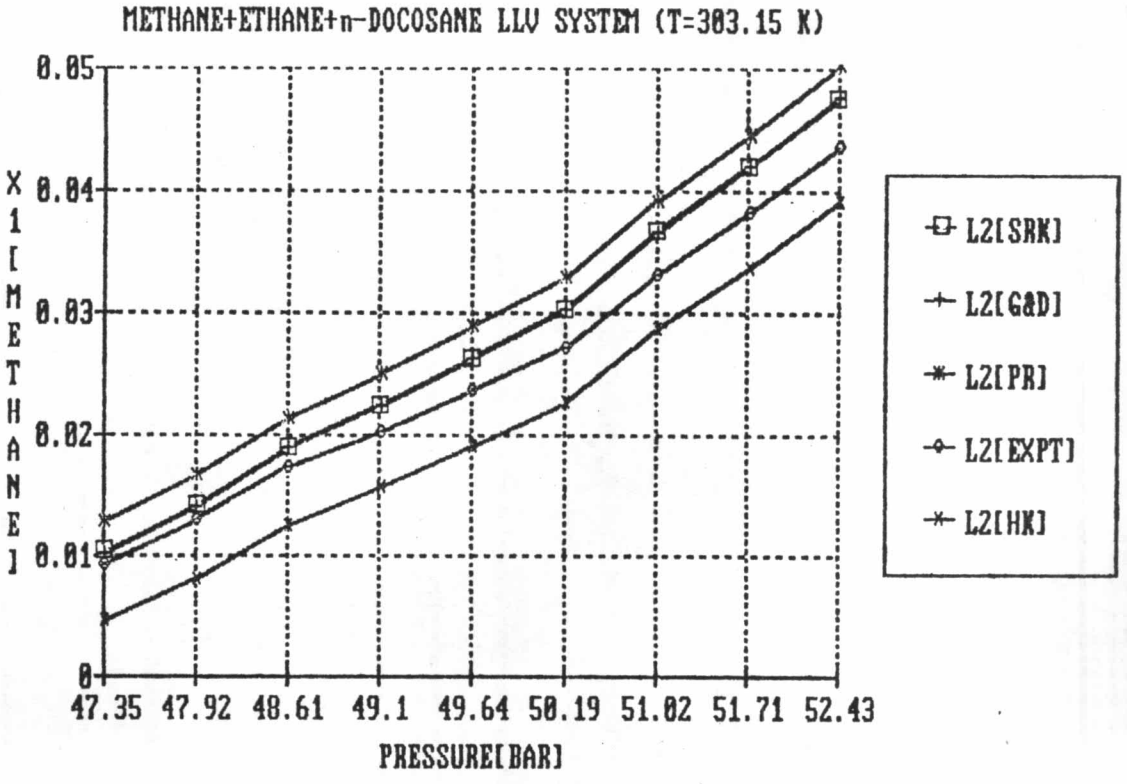

Figure 5.10 Comparisons of experimental and predicted Methane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of Methane(1)+Ethane (2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

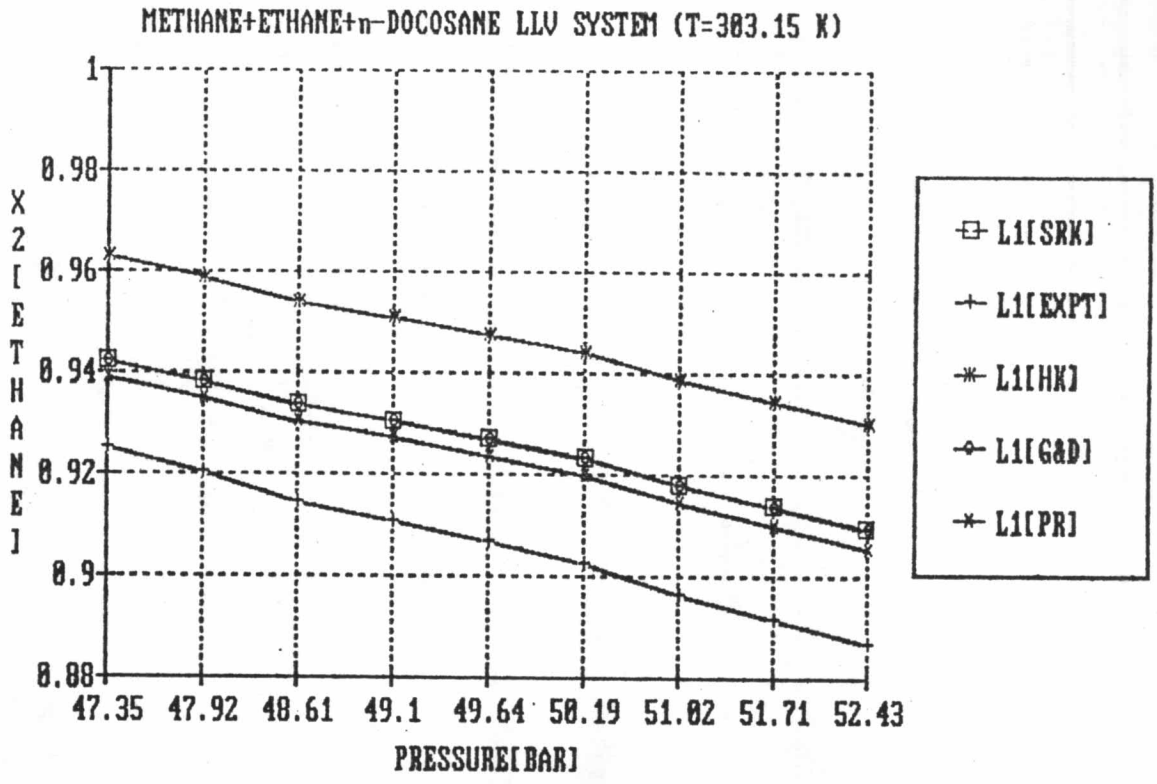

Figure 5.11 Comparisons of experimental and predicted ethane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L' phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

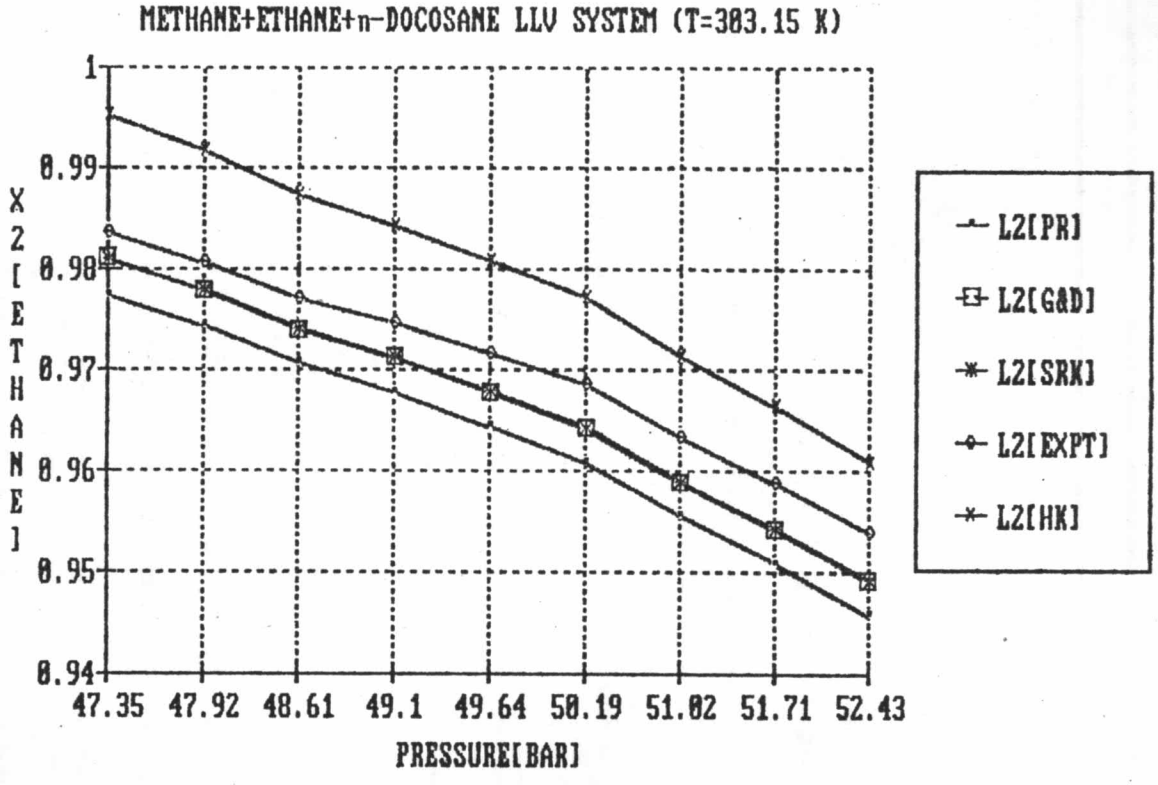

Figure 5.12 Comparisons of experimental and predicted ethane mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

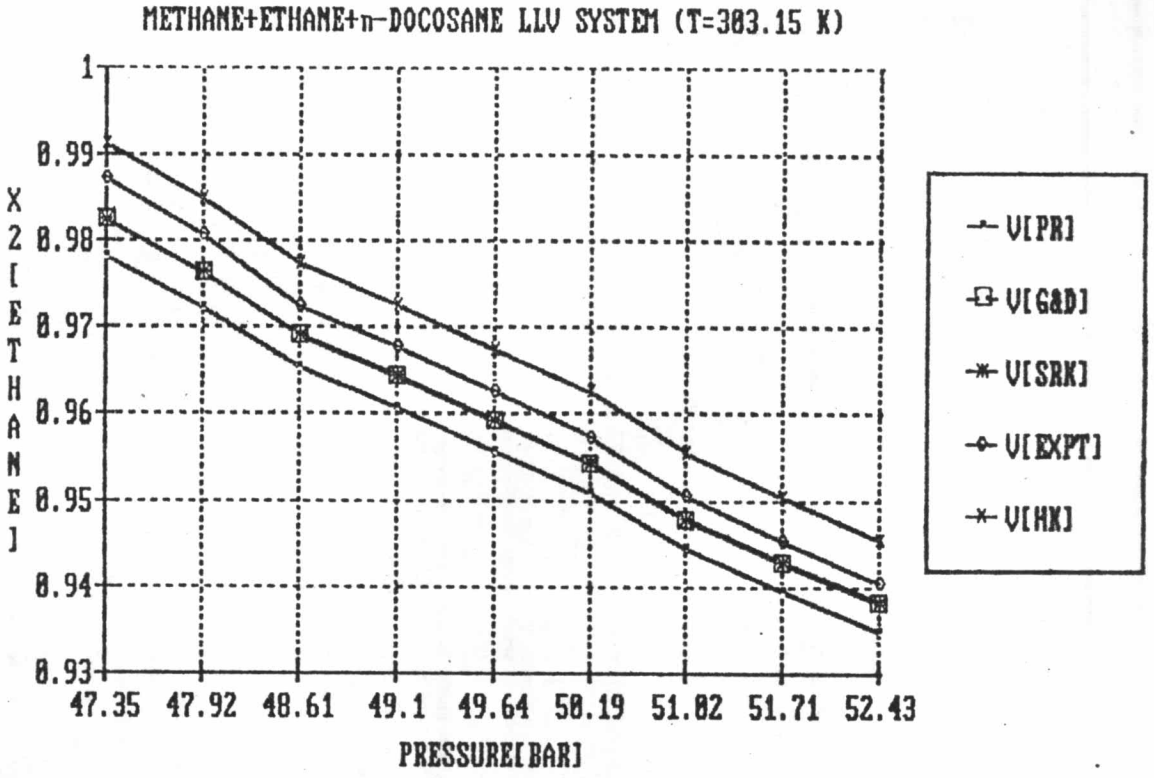

Figure 5.13 Comparisons of experimental and predicted ethane mole fraction by SRK,HK,G&D and PR equations of state(k_{13}=0) as a function of pressure for vapor phase of Methane(1)+Ethane(2)+n-Docosane(3)system.[Data from Jangkamolkulchai, A. and Luke,K.D.(1989).]

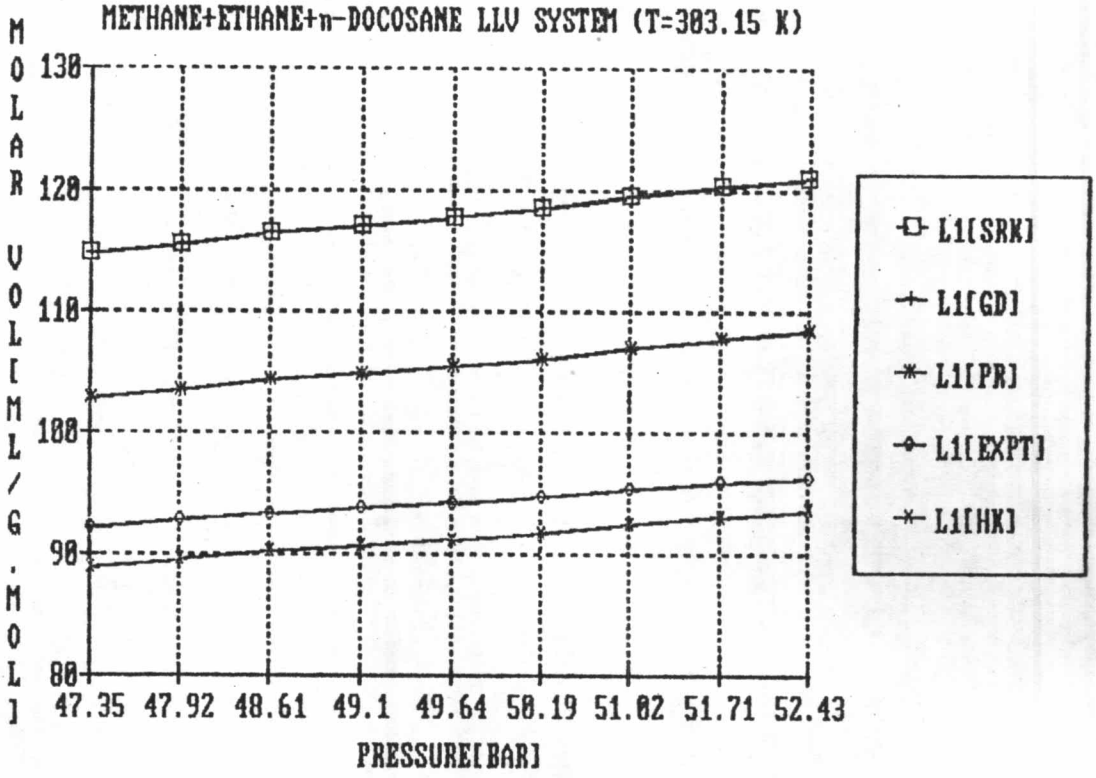

Figure 5.14 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^1 phase of Methane(1)+Ethane (2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

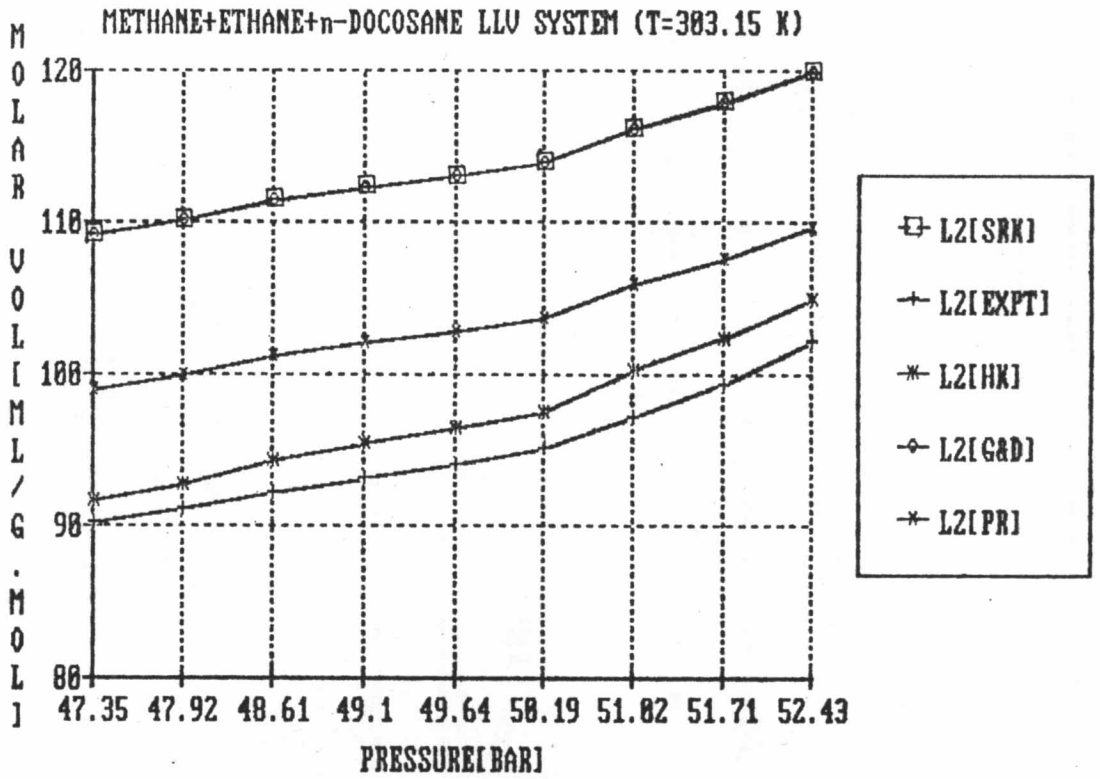

Figure 5.15 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{II} phase of Methane(1) +Ethane(2)+n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

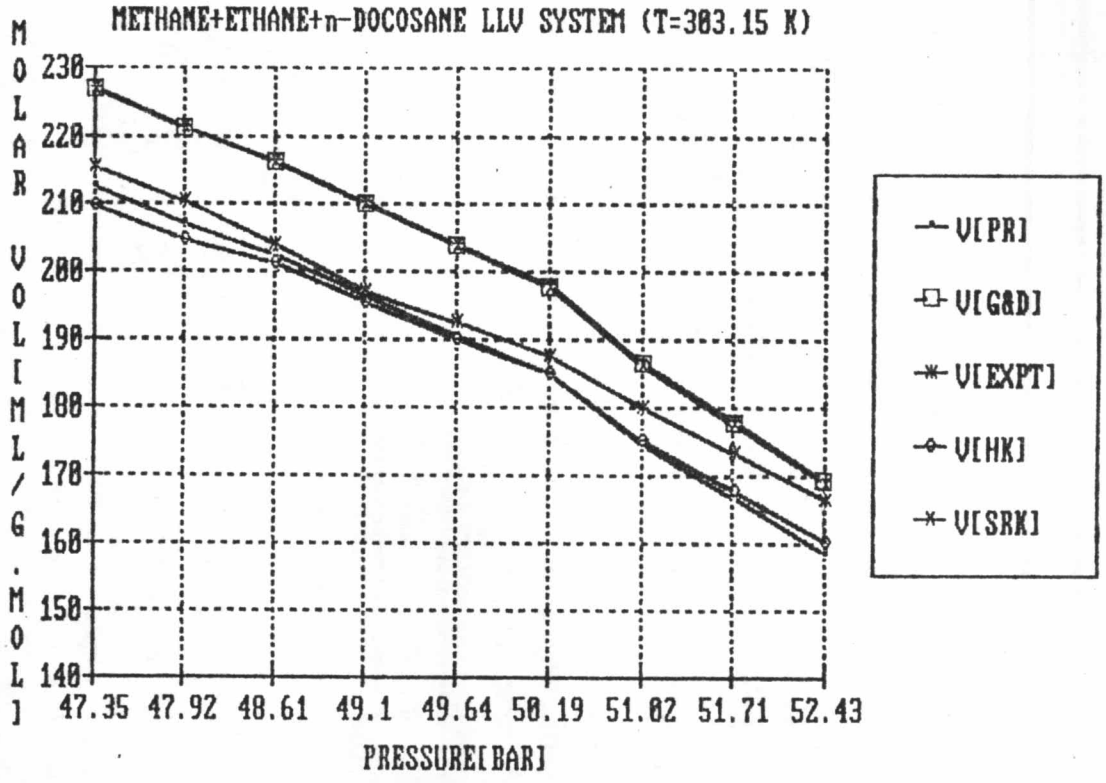

Figure 5.16 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of Methane(1)+Ethane(2) +n-Docosane(3)system.

[Data from Jangkamolkulchai,A. and Luke,K.D.(1989).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=294.15 K) **Table 5.17**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)	N2 EXPT	N2 SRK EOS	ABS DEV(%)	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)	N2 EXPT	N2 SRK EOS	ABS DEV(%)	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)
65.5000	0.6992	0.9214	31.7792	0.0066	0.0215	225.7576	0.9778	0.9345	4.4283	0.0153	0.0285	86.2745	0.9460	0.9026	4.5877
68.9500	0.6935	0.9168	32.1990	0.0101	0.0271	168.3168	0.9705	0.9287	4.3071	0.0230	0.0366	59.1304	0.9243	0.8835	4.4142
72.3900	0.6877	0.9120	32.6160	0.0133	0.0325	144.3609	0.9625	0.9219	4.2182	0.0312	0.0435	39.4231	0.9059	0.8676	4.2278
75.8400	0.6833	0.9083	32.9284	0.0162	0.0380	134.5679	0.9543	0.9170	3.9086	0.0398	0.0532	33.6683	0.8900	0.8535	4.1011
79.2900	0.6772	0.9043	33.5351	0.0195	0.0432	121.5385	0.9454	0.9110	3.6387	0.0490	0.0620	26.5306	0.8779	0.8429	3.9868
82.7400	0.6718	0.9012	34.1471	0.0225	0.0482	114.2222	0.9358	0.9053	3.2592	0.0591	0.0713	20.6430	0.8686	0.8359	3.7647
86.1800	0.6649	0.8975	34.9827	0.0256	0.0533	108.2031	0.9252	0.8984	2.8967	0.0701	0.0815	16.2625	0.8631	0.8321	3.5917
AVG ABS DEV(%)			32.8675			151.4606			3.9600			44.2783			4.1804

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by S-R-K equation of state(k_{ij}=0) of CO_2(1)+N_2(2)+n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=294.15 K) **Table 5.18**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)	N2 EXPT	N2 H&K EOS	ABS DEV(%)	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)	N2 EXPT	N2 H&K EOS	ABS DEV(%)	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)
65.5000	0.6992	0.9556	36.6705	0.0066	0.0087	31.8182	0.9778	0.9819	0.4193	0.0153	0.0170	11.1111	0.9460	0.9267	2.0402
68.9500	0.6935	0.9515	37.2026	0.0101	0.0116	14.8515	0.9705	0.9757	0.5358	0.0230	0.0233	1.3043	0.9243	0.9075	1.8176
72.3900	0.6877	0.9450	37.4146	0.0133	0.0146	9.7744	0.9625	0.9684	0.6130	0.0312	0.0278	10.8974	0.9059	0.8926	1.4682
75.8400	0.6833	0.9429	37.9921	0.0162	0.0173	6.7901	0.9543	0.9625	0.8593	0.0398	0.0367	7.7889	0.8900	0.8765	1.5169
79.2900	0.6772	0.9382	38.5411	0.0195	0.0202	3.5897	0.9454	0.9552	1.0366	0.0490	0.0441	10.0000	0.8779	0.8651	1.4580
82.7400	0.6718	0.9339	39.0146	0.0225	0.0230	2.2222	0.9358	0.9471	1.2075	0.0591	0.0523	11.5059	0.8686	0.8568	1.3585
86.1800	0.6649	0.9286	39.6601	0.0256	0.0258	0.7812	0.9252	0.9381	1.3943	0.0701	0.0614	12.4108	0.8631	0.8521	1.2745
AVG ABS DEV(%)			37.8059			11.5077			0.7786			8.7680			1.6099

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by Harmens & Knapp equation of state(k_{ij}=0) of CO_2 (1)+N_2 (2)+n-Nonadecane(3) system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=294.15 K) **Table 5.19**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 PR EOS	ABS DEV(%)	N2 EXPT	N2 PR EOS	ABS DEV(%)	CO2 EXPT	CO2 PR EOS	ABS DEV(%)	N2 EXPT	N2 PR EOS	ABS DEV(%)	CO2 EXPT	CO2 PR EOS	ABS DEV(%)
65.5000	0.6992	0.8756	25.2288	0.0066	0.0248	275.7576	0.9778	0.9257	5.3283	0.0153	0.0321	109.8039	0.9460	0.8939	5.5074
68.9500	0.6935	0.8700	25.4506	0.0101	0.0309	205.9406	0.9705	0.9188	5.3272	0.0230	0.0408	77.3913	0.9243	0.8743	5.4095
72.3900	0.6877	0.8659	25.9125	0.0133	0.0365	174.4361	0.9625	0.9120	5.2468	0.0312	0.0519	66.3462	0.9059	0.8533	5.8064
75.8400	0.6833	0.8593	25.7574	0.0162	0.0428	164.1975	0.9543	0.9048	5.1870	0.0398	0.0587	47.4874	0.8900	0.8433	5.2472
79.2900	0.6772	0.8541	26.1223	0.0195	0.0487	149.7436	0.9454	0.8976	5.0561	0.0490	0.0682	39.1837	0.8779	0.8319	5.2398
82.7400	0.6718	0.8499	26.5109	0.0225	0.0543	141.3333	0.9358	0.8907	4.8194	0.0591	0.0784	32.6565	0.8686	0.8241	5.1232
86.1800	0.6649	0.8451	27.1018	0.0256	0.0601	134.7656	0.9252	0.8828	4.5828	0.0701	0.0897	27.9601	0.8631	0.8193	5.0747
AVG ABS DEV(%)			25.8304			185.2348			5.1608			62.1448			5.3889

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by PR equation of state(k_{ij}=0) of CO_2(1)+N_2(2)+n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=294.15 K) **Table 5.20**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)	N2 EXPT	N2 G&D EOS	ABS DEV(%)	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)	N2 EXPT	N2 G&D EOS	ABS DEV(%)	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)
65.5000	0.6992	0.9216	31.8078	0.0066	0.0214	224.2424	0.9778	0.9347	4.4079	0.0153	0.0284	85.6209	0.9460	0.9028	4.5666
68.9500	0.6935	0.9171	32.2422	0.0101	0.0270	167.3267	0.9705	0.9290	4.2761	0.0230	0.0364	58.2609	0.9243	0.8837	4.3925
72.3900	0.6877	0.9100	32.3251	0.0133	0.0332	149.6241	0.9625	0.9250	3.8961	0.0312	0.0456	46.1538	0.9059	0.8679	4.1947
75.8400	0.6833	0.9087	32.9870	0.0162	0.0377	132.7160	0.9543	0.9174	3.8667	0.0398	0.0529	32.9146	0.8900	0.8537	4.0787
79.2900	0.6772	0.9047	33.5942	0.0195	0.0430	120.5128	0.9454	0.9114	3.5964	0.0490	0.0617	25.9184	0.8779	0.8432	3.9526
82.7400	0.6718	0.9017	34.2215	0.0225	0.0479	112.8889	0.9358	0.9058	3.2058	0.0591	0.0709	19.9662	0.8686	0.8362	3.7301
86.1800	0.6649	0.8981	35.0729	0.0256	0.0530	107.0313	0.9252	0.8990	2.8318	0.0701	0.0812	15.8345	0.8631	0.8324	3.5569
AVG ABS DEV(%)			32.8630			151.2185			3.8748			44.8058			4.1525

Comparisons of experimental and predicted equilibrium mole fraction in $V-L'-L''$ by G&D equation of state($k_{ij}=0$) of $CO_2(1)+N_2(2)$ +n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

CO2+N2+n-NONADECANE T=294.15 K LLV SYSTEM **Table 5.21**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)
65.5000	132.0000	192.7000	45.9848	58.9000	70.5000	19.6944	177.7000	196.7000	10.6922
68.9500	132.6000	193.5000	45.9276	59.2000	70.8000	19.5946	170.4000	184.9000	8.5094
72.3900	133.4000	194.6000	45.8771	59.8000	71.0000	18.7291	161.9000	173.6000	7.2267
75.8400	133.7000	195.1000	45.9237	60.9000	71.5000	17.4056	151.9000	162.9000	7.2416
79.2900	134.6000	196.2000	45.7652	62.2000	72.1000	15.9164	141.7000	151.9000	7.1983
82.7400	135.2000	197.2000	45.8580	63.7000	72.8000	14.2857	131.3000	140.9000	7.3115
86.1800	136.4000	198.8000	45.7478	66.0000	73.8000	11.8182	120.8000	129.2000	6.9536
AVG ABS DEV(%)			45.8894			17.6043			8.0299

CO2+N2+n-NONADECANE T=294.15 K LLV SYSTEM **Table 5.22**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)
65.5000	132.0000	147.0000	11.3636	58.9000	57.0000	3.2258	177.7000	180.8000	1.7445
68.9500	132.6000	147.7000	11.3876	59.2000	57.4000	3.0405	170.4000	170.2000	0.1174
72.3900	133.4000	148.6000	11.3943	59.8000	57.9000	3.1773	161.9000	159.9000	1.2353
75.8400	133.7000	149.1000	11.5183	60.9000	58.5000	3.9409	151.9000	150.2000	1.1192
79.2900	134.6000	150.1000	11.5156	62.2000	59.2000	4.8232	141.7000	139.8000	1.3409
82.7400	135.2000	150.9000	11.6124	63.7000	60.1000	5.6515	131.3000	129.5000	1.3709
86.1800	136.4000	152.2000	11.5836	66.0000	61.3000	7.1212	120.8000	118.3000	2.0695
AVG ABS DEV(%)			11.4822			4.4258			1.2854

Comparisons of experimental and predicted molar volume by SRK and Harmens & Knapp equation of state(k_{ij}=0) as a function of pressure for V-$L^{'}$-$L^{''}$ phases of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE T=294.15 K LLV SYSTEM **Table 5.23**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)
65.5000	132.0000	172.3000	30.5303	58.9000	63.8000	8.3192	177.7000	186.2000	4.7833
68.9500	132.6000	173.1000	30.5430	59.2000	64.1000	8.2770	170.4000	174.7000	2.5235
72.3900	133.4000	174.0000	30.4348	59.8000	64.3000	7.5251	161.9000	163.7000	1.1118
75.8400	133.7000	174.5000	30.5161	60.9000	64.9000	6.5681	151.9000	153.5000	1.0533
79.2900	134.6000	175.5000	30.3863	62.2000	65.5000	5.3055	141.7000	142.9000	0.8469
82.7400	135.2000	176.4000	30.4734	63.7000	66.3000	4.0816	131.3000	132.3000	0.7616
86.1800	136.4000	177.8000	30.3519	66.0000	67.3000	1.9697	120.8000	121.1000	0.2483
AVG ABS DEV(%)			30.4623			6.0066			1.6184

CO2+N2+n-NONADECANE T=294.15 K LLV SYSTEM **Table 5.24**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)
65.5000	132.0000	192.7000	45.9848	58.9000	70.5000	19.6944	177.7000	196.8000	10.7485
68.9500	132.6000	193.5000	45.9276	59.2000	70.8000	19.5946	170.4000	185.0000	8.5681
72.3900	133.4000	194.6000	45.8771	59.8000	71.0000	18.7291	161.9000	173.7000	7.2884
75.8400	133.7000	195.1000	45.9237	60.9000	71.5000	17.4056	151.9000	163.1000	7.3733
79.2900	134.6000	196.2000	45.7652	62.2000	72.1000	15.9164	141.7000	152.1000	7.3394
82.7400	135.2000	197.2000	45.8580	63.7000	72.8000	14.2857	131.3000	141.1000	7.4638
86.1800	136.4000	198.8000	45.7478	66.0000	73.8000	11.8182	120.8000	129.4000	7.1192
AVG ABS DEV(%)			45.8692			16.7777			7.9858

Comparisons of experimental and predicted molar volume by PR and G&D equations of state(k_{ij}=0) as a function of pressure for V-L^{I}-L^{II} phases of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

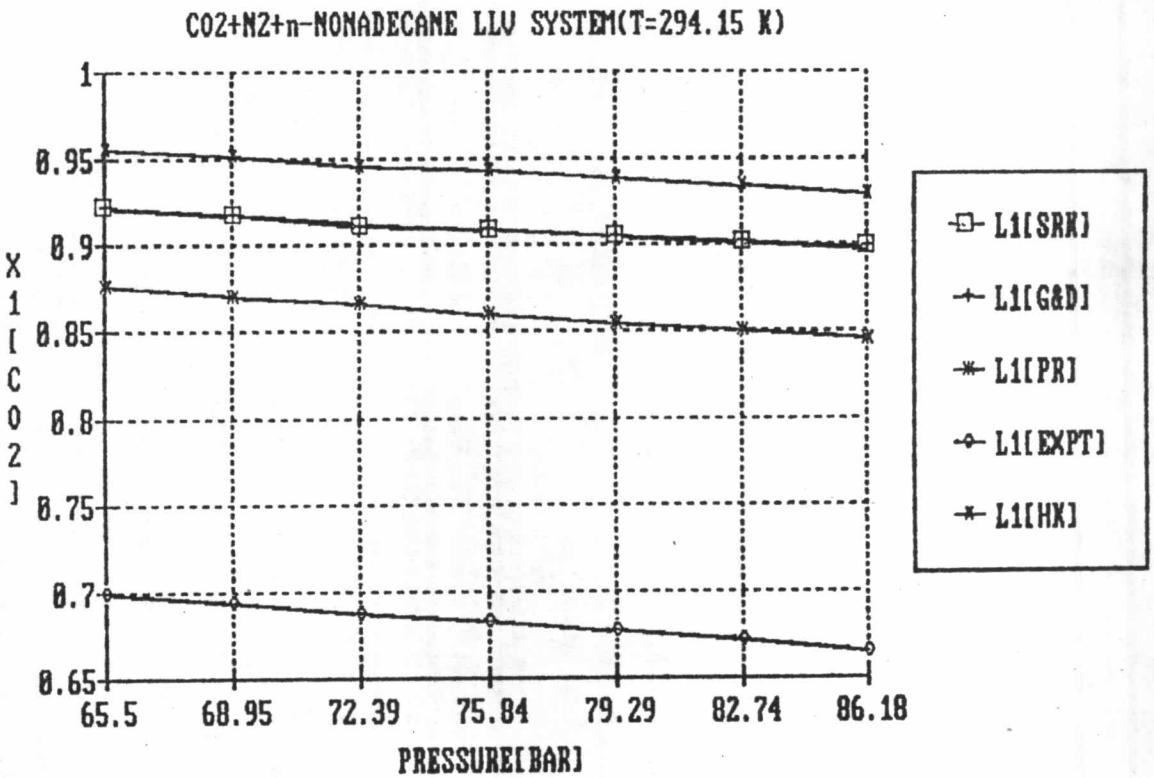

Figure 5.17 Comparisons of experimental and predicted CO_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^1 phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

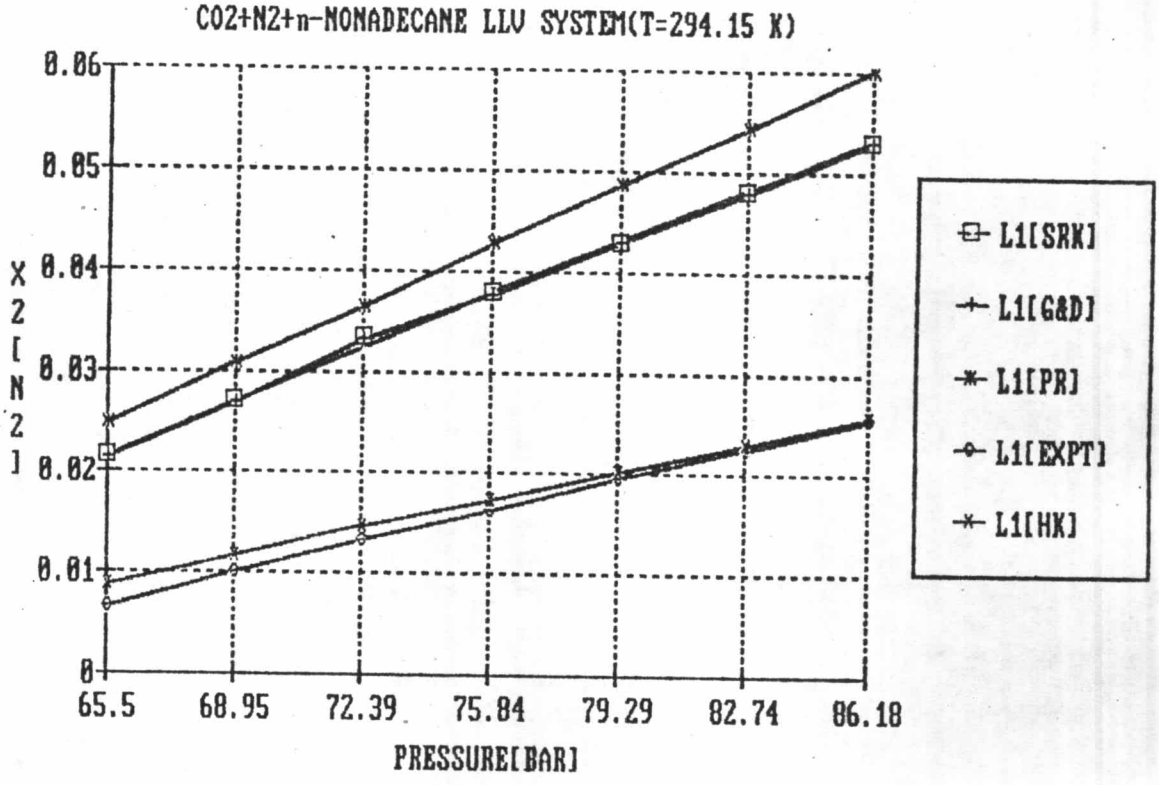

Figure 5.18 Comparisons of experimental and predicted N_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L' phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

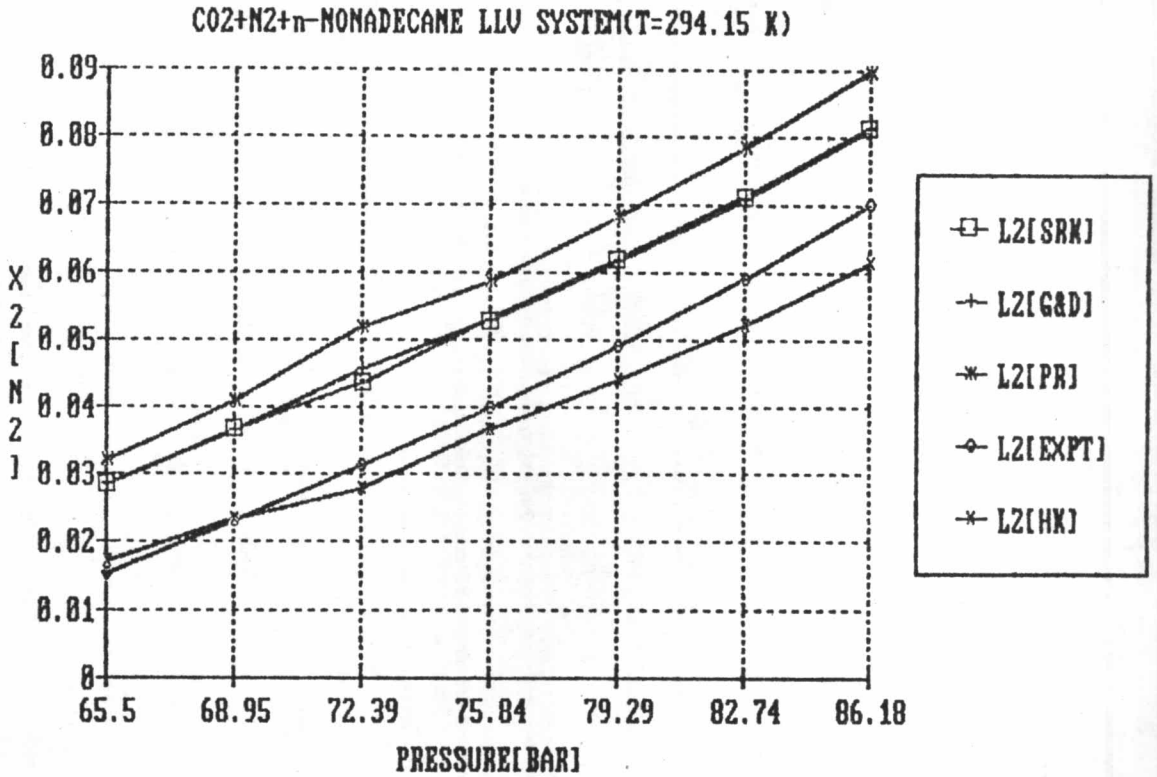

Figure 5.19 Comparisons of experimental and predicted N_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{II} phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

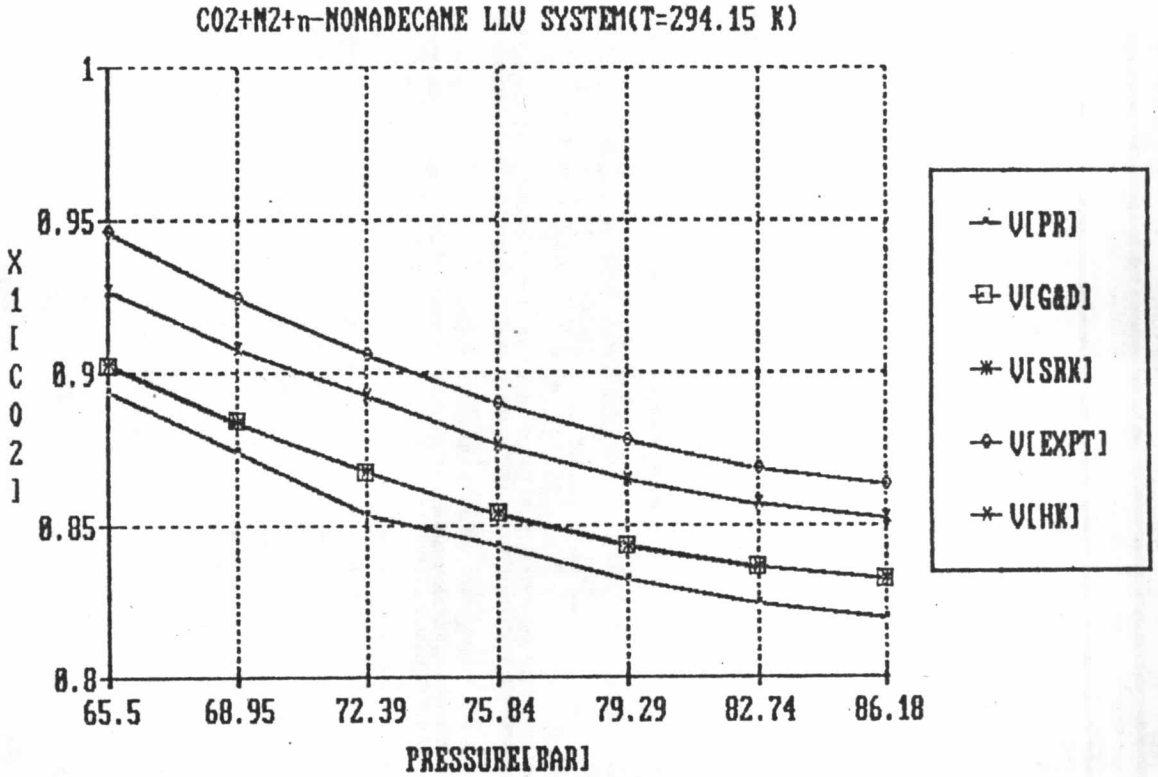

Figure 5.20 Comparisons of experimental and predicted CO_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

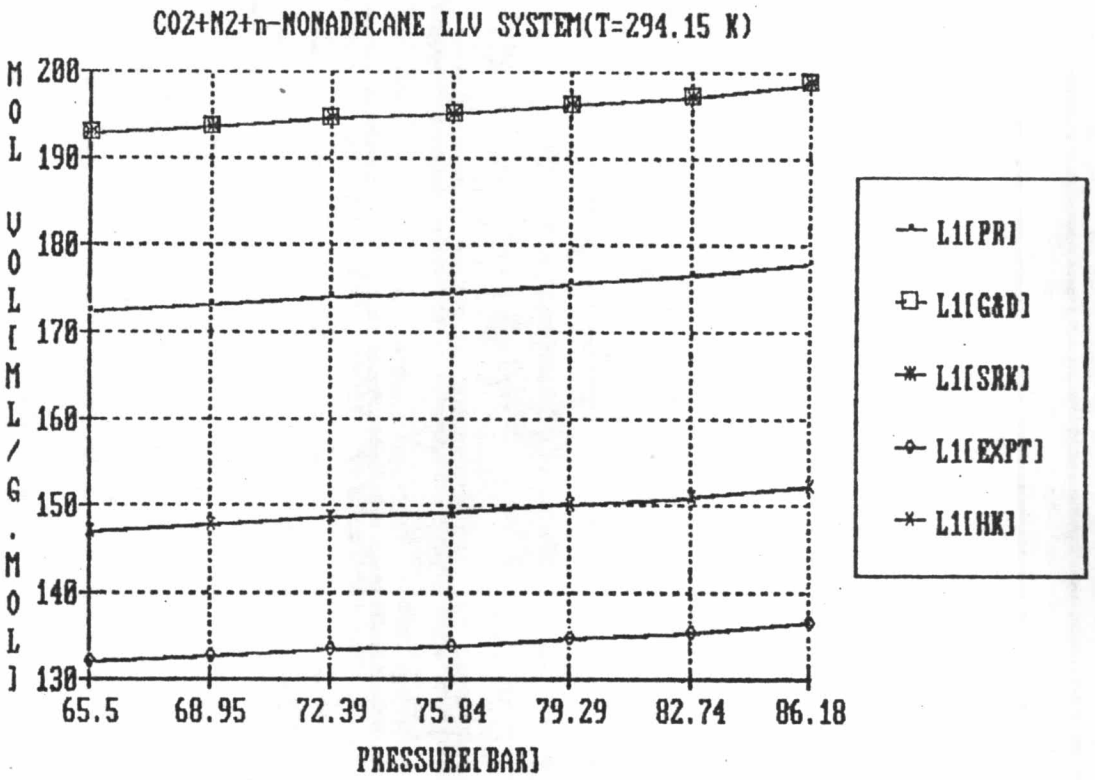

Figure 5.21 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{1} phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

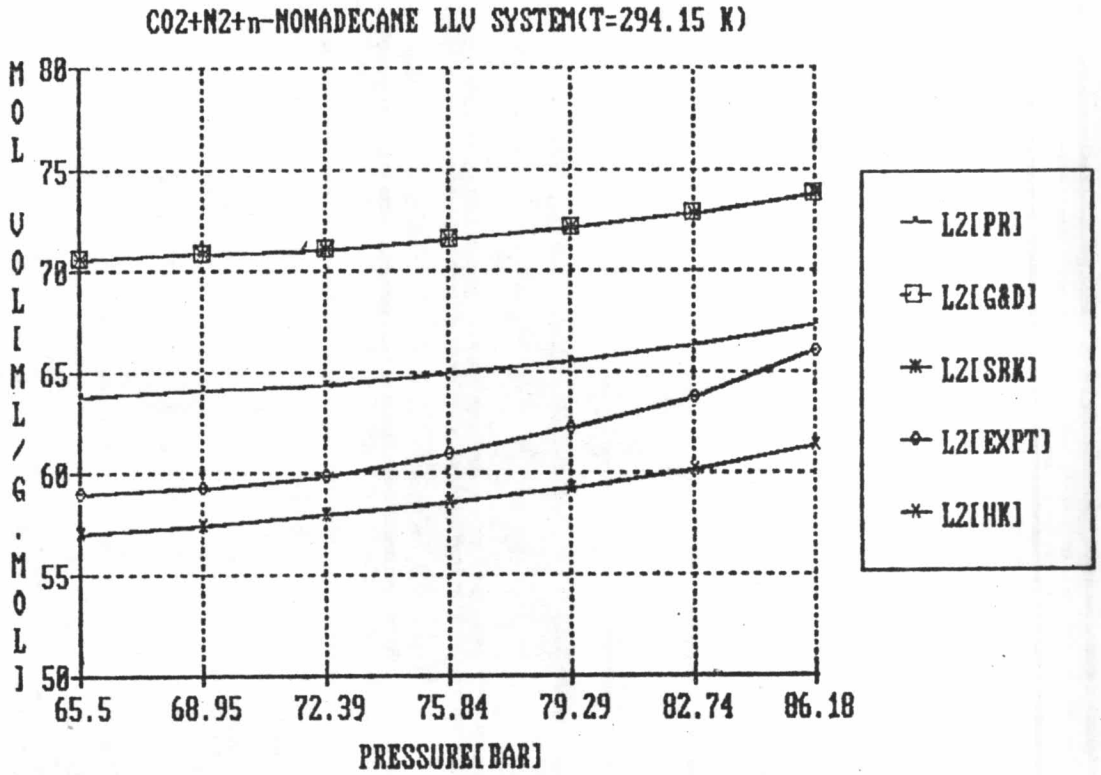

Figure 5.22 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

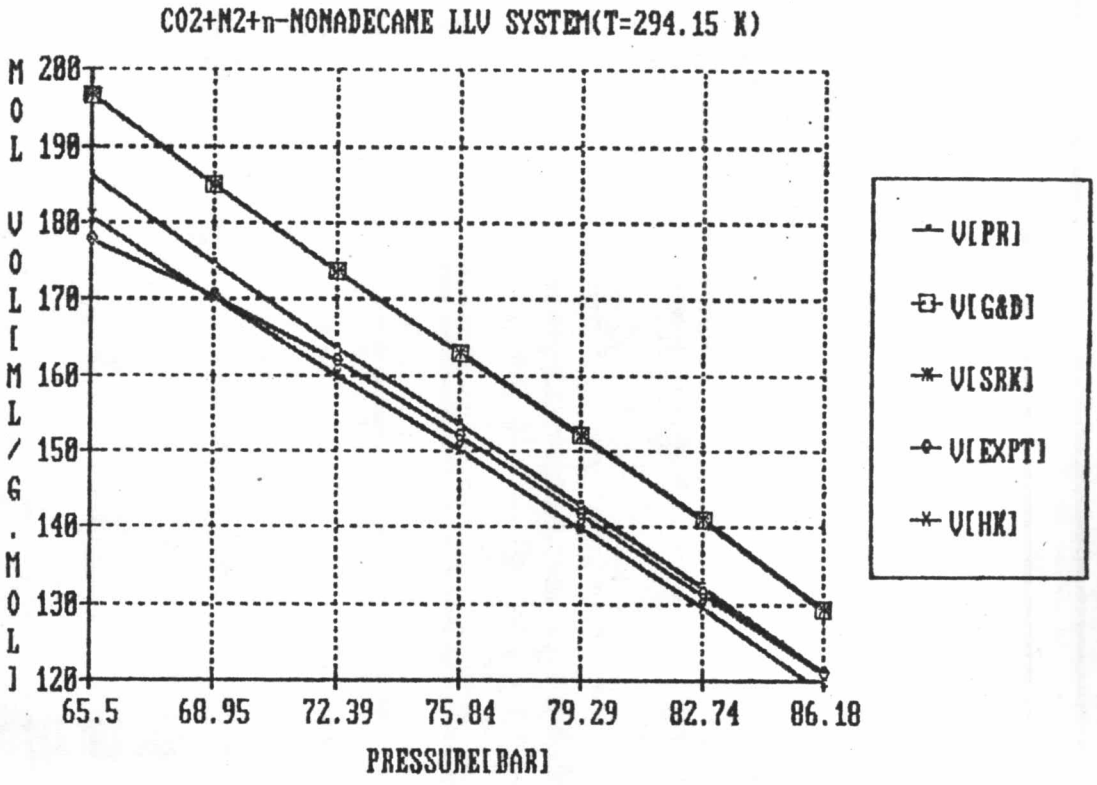

Figure 5.23 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE(TEMP=297.15 K) **Table 5.25**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)	N2 EXPT	N2 SRK EOS	ABS DEV(%)	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)	N2 EXPT	N2 SRK EOS	ABS DEV(%)	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)
65.5000	0.7092	0.9448	33.2205	0.0034	0.0110	223.5294	0.9909	0.9626	2.8560	0.0063	0.0162	157.1429	0.9780	0.9524	2.6176
68.9500	0.7028	0.9390	33.6084	0.0072	0.0168	133.3333	0.9833	0.9550	2.8781	0.0141	0.0252	78.7234	0.9562	0.9314	2.5936
72.3900	0.6963	0.9339	34.1232	0.0108	0.0223	106.4815	0.9752	0.9478	2.8097	0.0225	0.0343	52.4444	0.9390	0.9145	2.6092
75.8400	0.6896	0.9291	34.7303	0.0160	0.0277	73.1250	0.9669	0.9404	2.7407	0.0311	0.0436	40.1929	0.9232	0.9002	2.4913
79.2900	0.6829	0.9237	35.2614	0.0184	0.0331	79.8913	0.9576	0.9322	2.6525	0.0406	0.0536	32.0197	0.9116	0.8890	2.4792
82.7400	0.6764	0.9185	35.7924	0.0221	0.0386	74.6606	0.9471	0.9233	2.5129	0.0513	0.0648	26.3158	0.9040	0.8820	2.4336
AVG ABS DEV(%)			34.4560			115.1702			2.7416			64.4732			2.5374

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by S-R-K equation of state(k_{ij}=0) of CO_2(1)+N_2(2)+n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

CO2+N2+n-NONADECANE(TEMP=297.15 K) **Table 5.26**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)	N2 EXPT	N2 H&K EOS	ABS DEV(%)	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)	N2 EXPT	N2 H&K EOS	ABS DEV(%)	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)
65.5000	0.7092	0.9607	35.4625	0.0034	0.0039	14.7059	0.9909	0.9906	0.0303	0.0063	0.0090	42.8571	0.9780	0.9691	0.9100
68.9500	0.7028	0.9562	36.0558	0.0072	0.0068	5.5556	0.9833	0.9835	0.0203	0.0141	0.0161	14.1844	0.9562	0.9491	0.7425
72.3900	0.6963	0.9516	36.6652	0.0108	0.0096	11.1111	0.9752	0.9760	0.0820	0.0225	0.0236	4.8889	0.9390	0.9326	0.6816
75.8400	0.6896	0.9479	37.4565	0.0160	0.0124	22.5000	0.9669	0.9681	0.1241	0.0311	0.0316	1.6077	0.9232	0.9184	0.5199
79.2900	0.6829	0.9425	38.0144	0.0184	0.0152	17.3913	0.9576	0.9596	0.2089	0.0406	0.0402	0.9852	0.9116	0.9076	0.4388
82.7400	0.6764	0.9377	38.6310	0.0221	0.0180	18.5520	0.9471	0.9500	0.3062	0.0513	0.0498	2.9240	0.9040	0.9009	0.3429
AVG ABS DEV(%)			37.0476			14.9693			0.1286			11.2412			0.6060

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by Harmens & Knapp equation of state(k_{ij}=0) of CO_2 (1)+N_2(2)+n-Nonadecane(3) system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE SYSTEM (T=297.15 K) **Table 5.27**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 PR EOS	ABS DEV(%)	N2 EXPT	N2 PR EOS	ABS DEV(%)	CO2 EXPT	CO2 PR EOS	ABS DEV(%)	N2 EXPT	N2 PR EOS	ABS DEV(%)	CO2 EXPT	CO2 PR EOS	ABS DEV(%)
65.5000	0.7092	0.8943	26.0998	0.0034	0.0152	347.0588	0.9909	0.9486	4.2688	0.0063	0.0216	242.8571	0.9780	0.9379	4.1002
68.9500	0.7028	0.8884	26.4087	0.0072	0.0212	194.4444	0.9833	0.9409	4.3120	0.0141	0.0308	118.4397	0.9562	0.9176	4.0368
72.3900	0.6963	0.8830	26.8132	0.0108	0.0272	151.8519	0.9752	0.9335	4.2760	0.0225	0.0404	79.5556	0.9390	0.9011	4.0362
75.8400	0.6896	0.8781	27.3347	0.0160	0.0329	105.6250	0.9669	0.9260	4.2300	0.0311	0.0501	61.0932	0.9232	0.8871	3.9103
79.2900	0.6829	0.8725	27.7639	0.0184	0.0388	110.8696	0.9576	0.9177	4.1667	0.0406	0.0608	49.7537	0.9116	0.8760	3.9052
82.7400	0.6764	0.8670	28.1786	0.0221	0.0448	102.7149	0.9471	0.9086	4.0650	0.0513	0.0728	41.9103	0.9040	0.8687	3.9049
AVG ABS DEV(%)			27.0998			168.7608			4.2198			98.9349			3.9823

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by PR equation of state(k_{ij}=0)of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE SYSTEM (T=297.15 K) **Table 5.28**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)	N2 EXPT	N2 G&D EOS	ABS DEV(%)	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)	N2 EXPT	N2 G&D EOS	ABS DEV(%)	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)
65.5000	0.7092	0.9449	33.2346	0.0034	0.0109	220.5882	0.9909	0.9627	2.8459	0.0063	0.0162	157.1429	0.9780	0.9524	2.6176
68.9500	0.7028	0.9392	33.6369	0.0072	0.0166	130.5556	0.9833	0.9552	2.8577	0.0141	0.0250	77.3050	0.9562	0.9316	2.5727
72.3900	0.6963	0.9342	34.1663	0.0108	0.0221	104.6296	0.9752	0.9481	2.7789	0.0225	0.0341	51.5556	0.9390	0.9147	2.5879
75.8400	0.6896	0.9294	34.7738	0.0160	0.0275	71.8750	0.9669	0.9407	2.7097	0.0311	0.0434	39.5498	0.9232	0.9004	2.4697
79.2900	0.6829	0.9241	35.3200	0.0184	0.0329	78.8043	0.9576	0.9325	2.6211	0.0406	0.0534	31.5271	0.9116	0.8892	2.4572
82.7400	0.6764	0.9189	35.8516	0.0221	0.0383	73.3032	0.9471	0.9237	2.4707	0.0513	0.0645	25.7310	0.9040	0.8822	2.4115
AVG ABS DEV(%)			34.4972			113.2927			2.7140			63.8019			2.5194

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by G&D equation of state(k_{ij}=0) of CO_2(1)+N_2(2) +n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

Table 5.29 CO2+N2+n-NONADECANE(TEMP=297.15 K)

L1-PHASE				L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)
65.5000	130.6000	144.9000	10.9495	59.0000	61.2000	3.7288	179.0000	172.3000	3.7430
68.9500	131.3000	145.8000	11.0434	60.2000	61.9000	2.8239	168.9000	161.7000	4.2629
72.3900	132.1000	146.8000	11.1279	61.3000	62.9000	2.6101	154.7000	149.8000	3.1674
75.8400	132.8000	147.3000	10.9187	62.6000	64.0000	2.2364	144.6000	139.9000	3.2503
79.2900	133.7000	148.8000	11.2939	64.6000	65.3000	1.0836	132.5000	128.5000	3.0189
82.7400	134.6000	149.8000	11.2927	67.3000	66.9000	0.5944	120.1000	115.8000	3.5803
AVG ABS DEV(%)			11.1044			2.1795			3.5038

Table 5.30 CO2+N2+n-NONADECANE(TEMP=297.15 K)

L1-PHASE				L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)
65.5000	130.6000	190.2000	45.6355	59.0000	73.7000	24.9153	179.0000	188.8000	5.4749
68.9500	131.3000	191.2000	45.6207	60.2000	74.2000	23.2558	168.9000	176.8000	4.6773
72.3900	132.1000	192.4000	45.6472	61.3000	74.8000	22.0228	154.7000	163.9000	5.9470
75.8400	132.8000	193.0000	45.3313	62.6000	75.6000	20.7668	144.6000	152.8000	5.6708
79.2900	133.7000	194.8000	45.6993	64.6000	76.5000	18.4211	132.5000	140.6000	6.1132
82.7400	134.6000	195.9000	45.5423	67.3000	77.9000	15.7504	120.1000	127.2000	5.9117
AVG ABS DEV(%)			45.5794			20.8554			5.6325

Comparisons of experimental and predicted molar volume by SRK and Harmens & Knapp equation of state(k_{ij}=0) as a function of pressure for V-L^{I}-L^{II} phases of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

Table 5.31 CO2+N2+n-NONADECANE(TEMP=297.15 K)

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)
65.5000	130.6000	170.1000	30.2450	59.0000	66.7000	13.0508	179.0000	178.2000	0.4469
68.9500	131.3000	171.0000	30.2361	60.2000	67.1000	11.4618	168.9000	166.6000	1.3618
72.3900	132.1000	172.1000	30.2801	61.3000	67.9000	10.7667	154.7000	154.1000	0.3878
75.8400	132.8000	172.6000	29.9699	62.6000	68.6000	9.5847	144.6000	143.6000	0.6916
79.2900	133.7000	174.2000	30.2917	64.6000	69.6000	7.7399	132.5000	131.9000	0.4528
82.7400	134.6000	175.2000	30.1634	67.3000	71.0000	5.4978	120.1000	119.2000	0.7494
AVG ABS DEV(%)			30.1977			9.6836			0.6817

Table 5.32 CO2+N2+n-NONADECANE(TEMP=297.15 K)

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)
65.5000	130.6000	190.2000	45.6355	59.0000	73.7000	24.9153	179.0000	188.8000	5.4749
68.9500	131.3000	191.2000	45.6207	60.2000	74.2000	23.2558	168.9000	176.9000	4.7365
72.3900	132.1000	192.4000	45.6472	61.3000	74.9000	22.1860	154.7000	164.0000	6.0116
75.8400	132.8000	193.0000	45.3313	62.6000	75.6000	20.7668	144.6000	153.0000	5.8091
79.2900	133.7000	194.8000	45.6993	64.6000	76.6000	18.5759	132.5000	140.8000	6.2642
82.7400	134.6000	195.9000	45.5423	67.3000	77.9000	15.7504	120.1000	127.4000	6.0783
AVG ABS DEV(%)			45.5794			20.9083			5.7291

Comparisons of experimental and predicted molar volume by PR and G&D equations of state(k_{ij}=0) as a function of pressure for V-L'-L'' phases of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

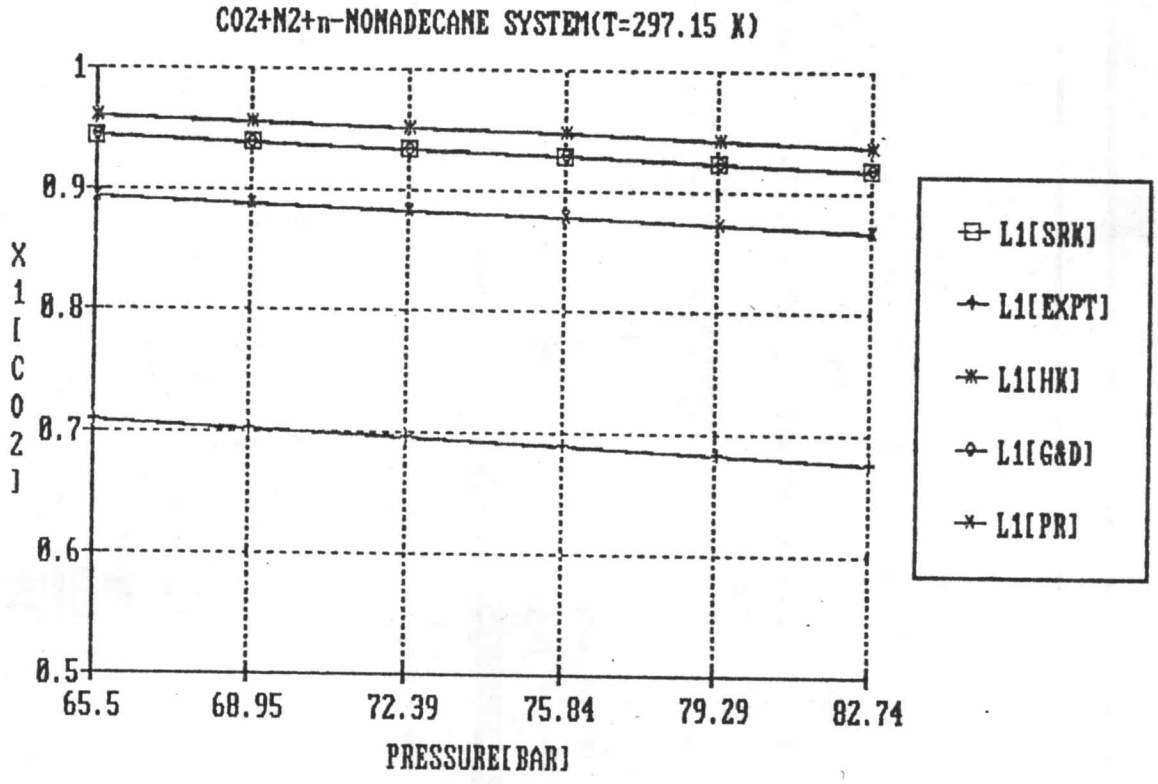

Figure 5.24 Comparisons of experimental and predicted CO_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L' phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

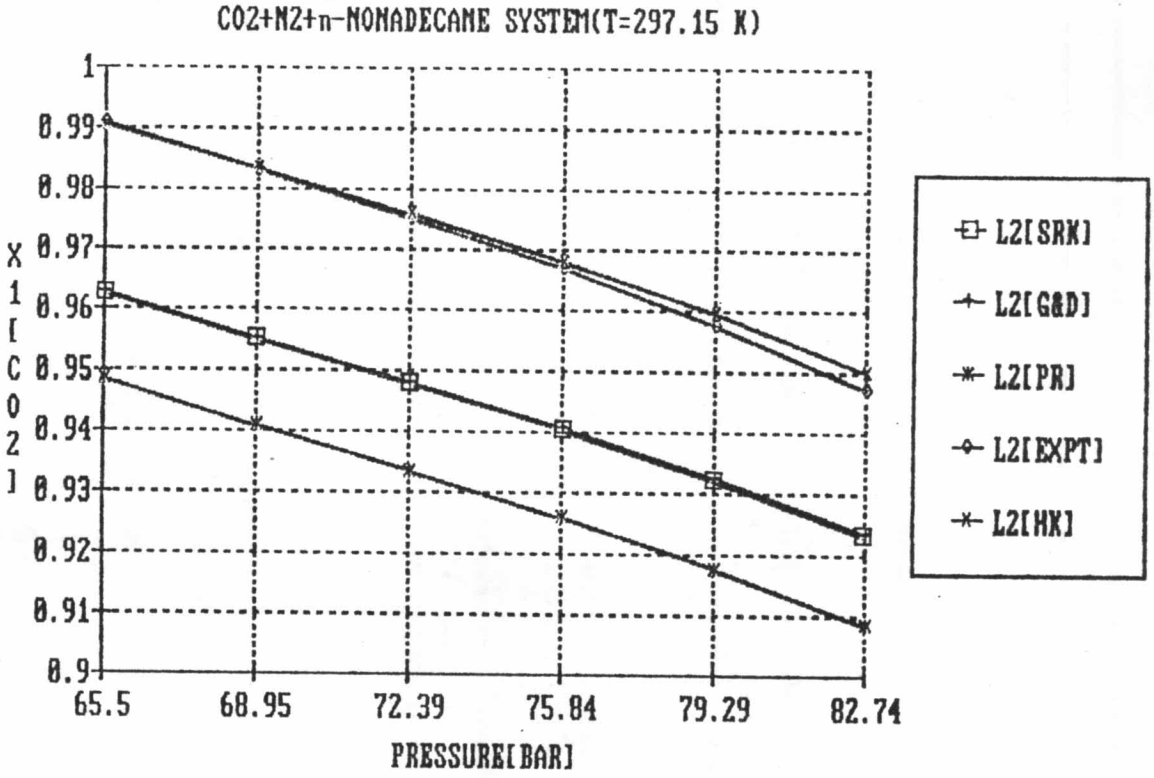

Figure 5.25 Comparisons of experimental and predicted CO_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

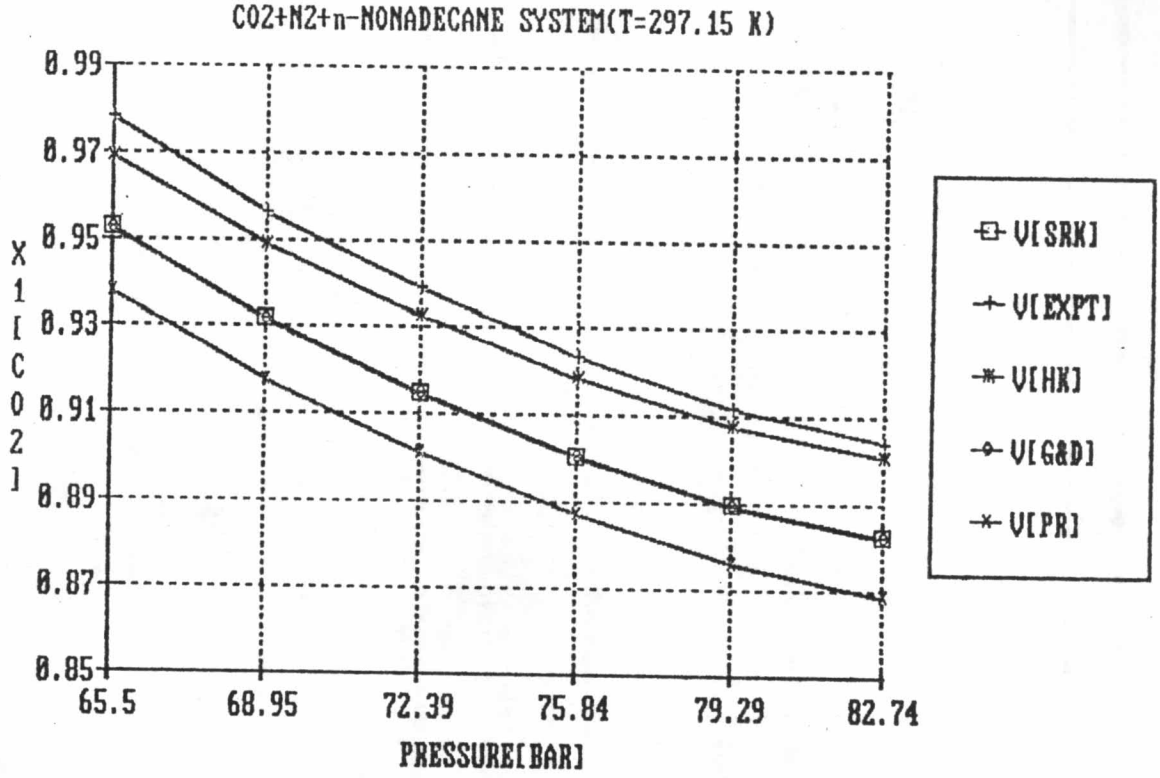

Figure 5.26 Comparisons of experimental and predicted CO_2 mole fraction by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of CO_2(1)+N_2(2) +n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

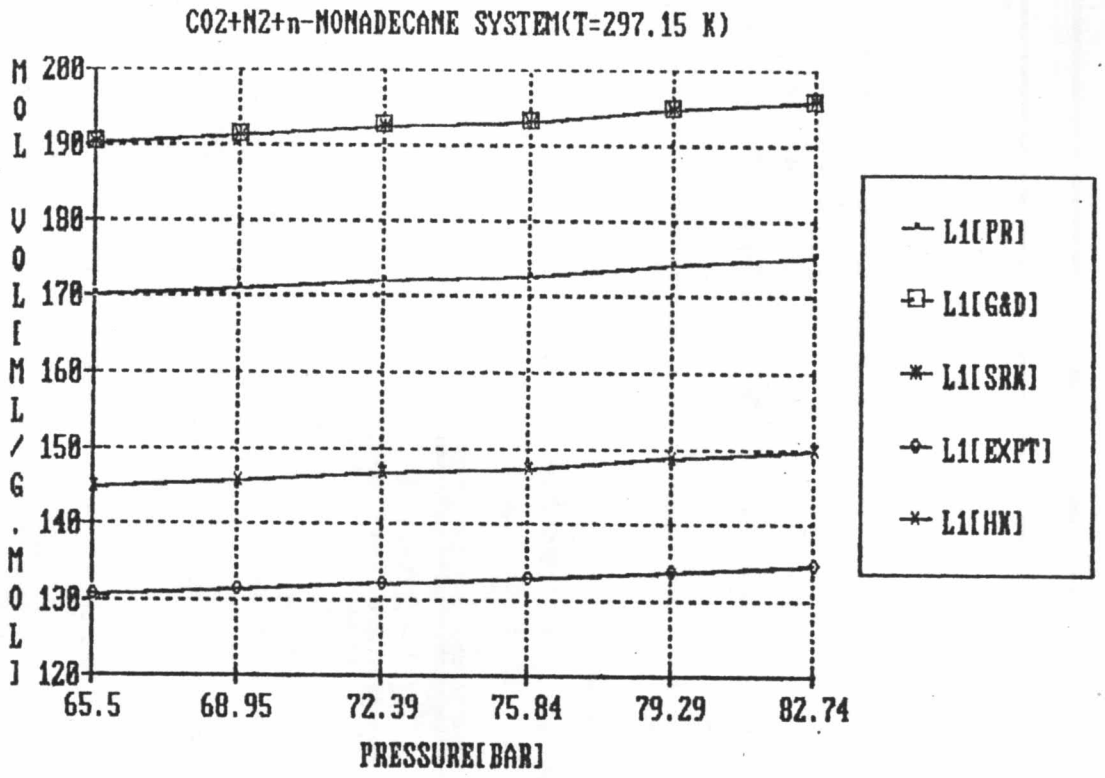

Figure 5.27 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L' phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

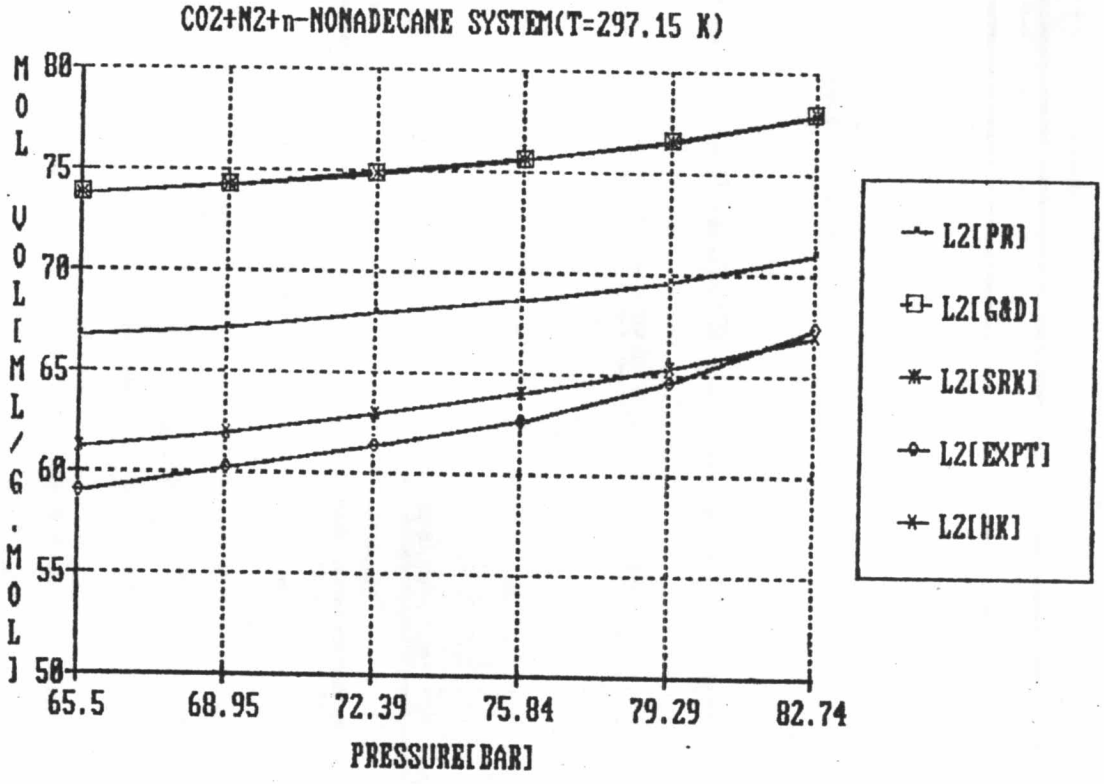

Figure 5.28 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

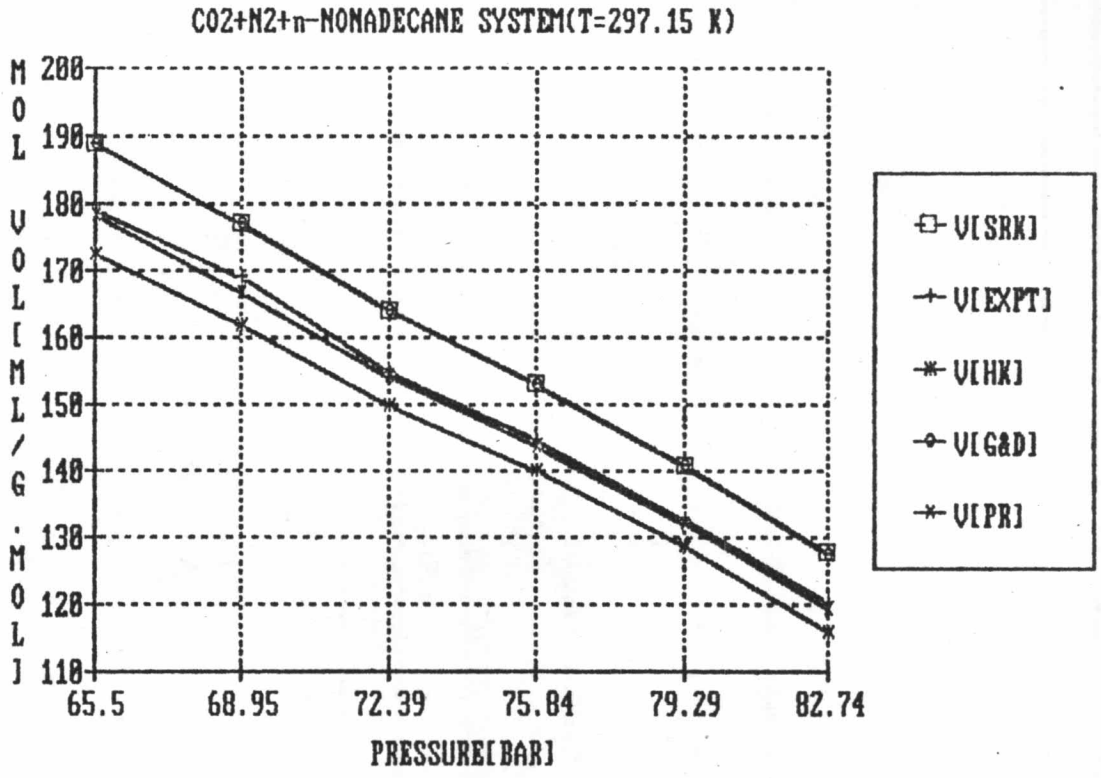

Figure 5.29 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=301.15 K) **Table 5.33**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)	N2 EXPT	N2 SRK EOS	ABS DEV(%)	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)	N2 EXPT	N2 SRK EOS	ABS DEV(%)	CO2 EXPT	CO2 SRK EOS	ABS DEV(%)
72.3900	0.7137	0.9457	32.5067	0.0036	0.0120	233.3333	0.9881	0.9675	2.0848	0.0099	0.0202	104.0404	0.9782	0.9582	2.0446
75.8400	0.7079	0.9385	32.5752	0.0067	0.0182	171.6418	0.9785	0.9574	2.1564	0.0195	0.0312	60.0000	0.9639	0.9426	2.2098
79.2900	0.7016	0.9341	33.1385	0.0093	0.0233	150.5376	0.9684	0.9492	1.9827	0.0302	0.0424	40.3974	0.9521	0.9333	1.9746
AVG ABS DEV(%)			32.7401			185.1709			2.0746			68.1459			2.0763

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by SRK equation of state(k_{ij}=0) of CO_2(1)+N_2(2)+n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=301.15 K) **Table5.34**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)	N2 EXPT	N2 H&K EOS	ABS DEV(%)	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)	N2 EXPT	N2 H&K EOS	ABS DEV(%)	CO2 EXPT	CO2 H&K EOS	ABS DEV(%)
72.3900	0.7137	0.9495	33.0391	0.0036	0.0040	11.1111	0.9881	0.9890	0.0911	0.0099	0.0107	8.0808	0.9782	0.9754	0.2862
75.8400	0.7079	0.9442	33.3804	0.0067	0.0069	2.9851	0.9785	0.9807	0.2248	0.0195	0.0191	2.0513	0.9639	0.9615	0.2490
79.2900	0.7016	0.9394	33.8940	0.0093	0.0096	3.2258	0.9684	0.9710	0.2685	0.0302	0.0289	4.3046	0.9521	0.9513	0.0840
AVG ABS DEV(%)			33.4378			5.7740			0.1948			4.8122			0.2064

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by Harmens & Knapp equation of state(k_{ij}=0) of CO_2(1)+N_2(2)+n-Nonadecane(3) system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=301.15 K) **Table 5.35**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 PR EOS	ABS DEV(%)	N2 EXPT	N2 PR EOS	ABS DEV(%)	CO2 EXPT	CO2 PR EOS	ABS DEV(%)	N2 EXPT	N2 PR EOS	ABS DEV(%)	CO2 EXPT	CO2 PR EOS	ABS DEV(%)
72.3900	0.7137	0.8854	24.0577	0.0036	0.0288	700.0000	0.9881	0.9360	5.2727	0.0099	0.0508	413.1313	0.9782	0.9205	5.8986
75.8400	0.7079	0.8973	26.7552	0.0067	0.0166	147.7612	0.9785	0.9543	2.4732	0.0195	0.0270	38.4615	0.9639	0.9452	1.9400
79.2900	0.7016	0.8898	26.8244	0.0093	0.0233	150.5376	0.9684	0.9440	2.5196	0.0302	0.0388	28.4768	0.9521	0.9297	2.3527
AVG ABS DEV(%)			25.8791			332.7663			3.4218			160.0232			3.3971

Comparisons of experimental and predicted equilibrium mole fraction in $V-L^{I}-L^{II}$ by PR equation of state(k_{ij}=0)of $CO_2(1)+N_2(2)$+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE LLV SYSTEM (T=301.15 K) **Table 5.36**

	L1-PHASE						L2-PHASE						V-PHASE		
P[BAR]	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)	N2 EXPT	N2 G&D EOS	ABS DEV(%)	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)	N2 EXPT	N2 G&D EOS	ABS DEV(%)	CO2 EXPT	CO2 G&D EOS	ABS DEV(%)
72.3900	0.7137	0.9458	32.5207	0.0036	0.0119	230.5556	0.9881	0.9677	2.0646	0.0099	0.0201	103.0303	0.9782	0.9583	2.0343
75.8400	0.7079	0.9387	32.6035	0.0067	0.0180	168.6567	0.9785	0.9577	2.1257	0.0195	0.0311	59.4872	0.9639	0.9428	2.1890
79.2900	0.7016	0.9344	33.1813	0.0093	0.0231	148.3871	0.9684	0.9495	1.9517	0.0302	0.0422	39.7351	0.9521	0.9336	1.9431
AVG ABS DEV(%)			32.7685			182.5331			2.0473			67.4175			2.0555

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by G&D equation of state(k_{ij}=0) of CO_2(1)+N_2(2) +n-Nonadecane(3) system.

[Data from Fall, D.J. and Luke, K.D. (1986).]

CO2+N2+n-NONADECANE T=301.15 K LLV SYSTEM **Table 5.37**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)	EXPT	H&K EOS	ABS DEV(%)
72.3900	130.6000	143.6000	9.9541	64.3000	67.7000	5.2877	146.9000	134.3000	8.5773
75.8400	131.3000	144.6000	10.1295	67.2000	68.7000	2.2321	130.7000	120.7000	7.6511
79.2900	132.2000	145.8000	10.2874	71.4000	72.1000	0.9804	114.1000	109.6000	3.9439
AVG ABS DEV(%)			10.1237			2.8334			6.7241

CO2+N2+n-NONADECANE T=301.15 K LLV SYSTEM **Table 5.38**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)	EXPT	SRK EOS	ABS DEV(%)
72.3900	130.6000	188.6000	44.4104	64.3000	80.3000	24.8834	146.9000	148.9000	1.3615
75.8400	131.3000	189.7000	44.4783	67.2000	81.1000	20.6845	130.7000	133.9000	2.4484
79.2900	132.2000	191.2000	44.6293	71.4000	83.8000	17.3669	114.1000	120.6000	5.6768
AVG ABS DEV(%)			44.5060			20.9783			3.1689

Comparisons of experimental and predicted equilibrium mole fraction in V-L'-L'' by SRK and Harmens & Knapp equation of state(k_{ij}=0)of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

CO2+N2+n-NONADECANE T=301.15 K LLV SYSTEM **Table 5.39**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)	EXPT	PR EOS	ABS DEV(%)
72.3900	130.6000	171.0000	30.9342	64.3000	76.9000	19.5956	146.9000	150.1000	2.1784
75.8400	131.3000	168.7000	28.4844	67.2000	73.3000	9.0774	130.7000	139.4000	6.6565
79.2900	132.2000	169.6000	28.2905	71.4000	74.2000	3.9216	114.1000	125.3000	9.8160
AVG ABS DEV(%)			29.2363			10.8649			6.2169

CO2+N2+n-NONADECANE T=301.15 K LLV SYSTEM **Table 5.40**

	L1-PHASE			L2-PHASE			V-PHASE		
P[BAR]	MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]			MOLAR VOL [ML/G.MOL]		
	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)	EXPT	G&D EOS	ABS DEV(%)
72.3900	130.6000	188.6000	44.4104	64.3000	80.3000	24.8834	146.9000	149.1000	1.4976
75.8400	131.3000	189.7000	44.4783	67.2000	81.2000	20.8333	130.7000	134.1000	2.6014
79.2900	132.2000	189.7000	43.4947	71.4000	81.2000	13.7255	114.1000	120.9000	5.9597
AVG ABS DEV(%)			44.1278			19.8141			3.3529

Comparisons of experimental and predicted molar volume by PR and G&D equations of state(k_{ij}=0) as a function of pressure for V-L^{I}-L^{II} phases of CO_2(1)+N_2(2)+n-Nonadecane(3)system. [Data from Fall,D.J. and Luke,K.D.(1986).]

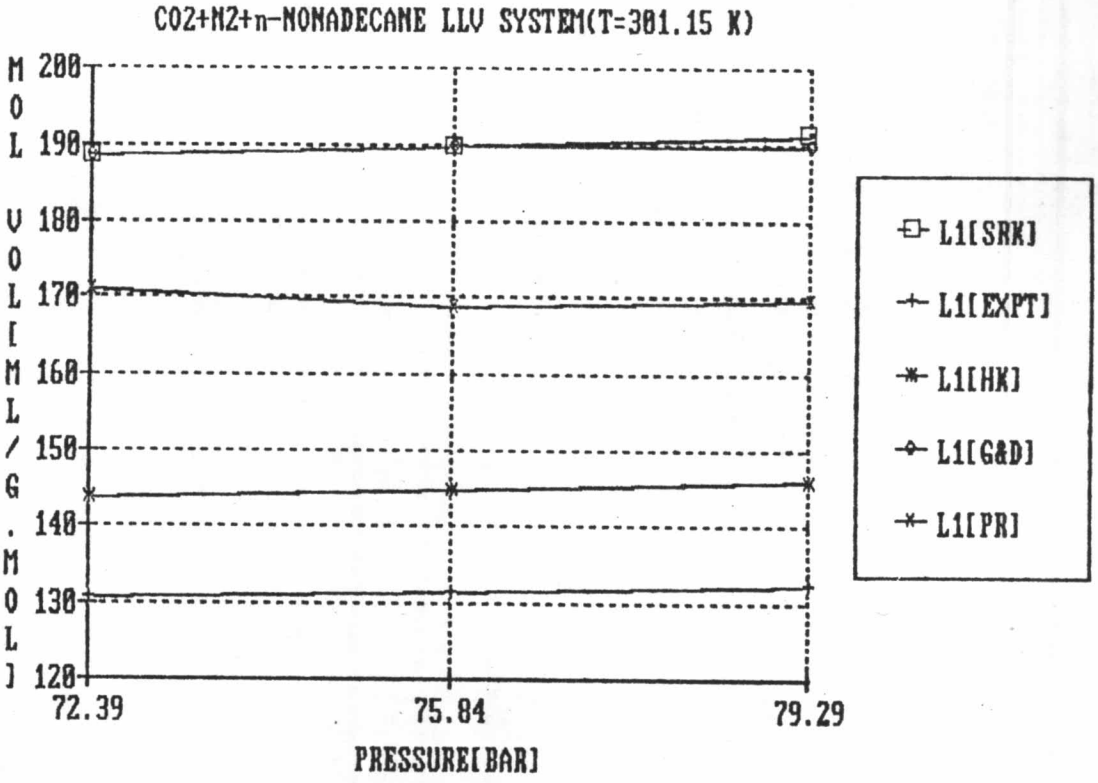

Figure 5.30 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L^{1} phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

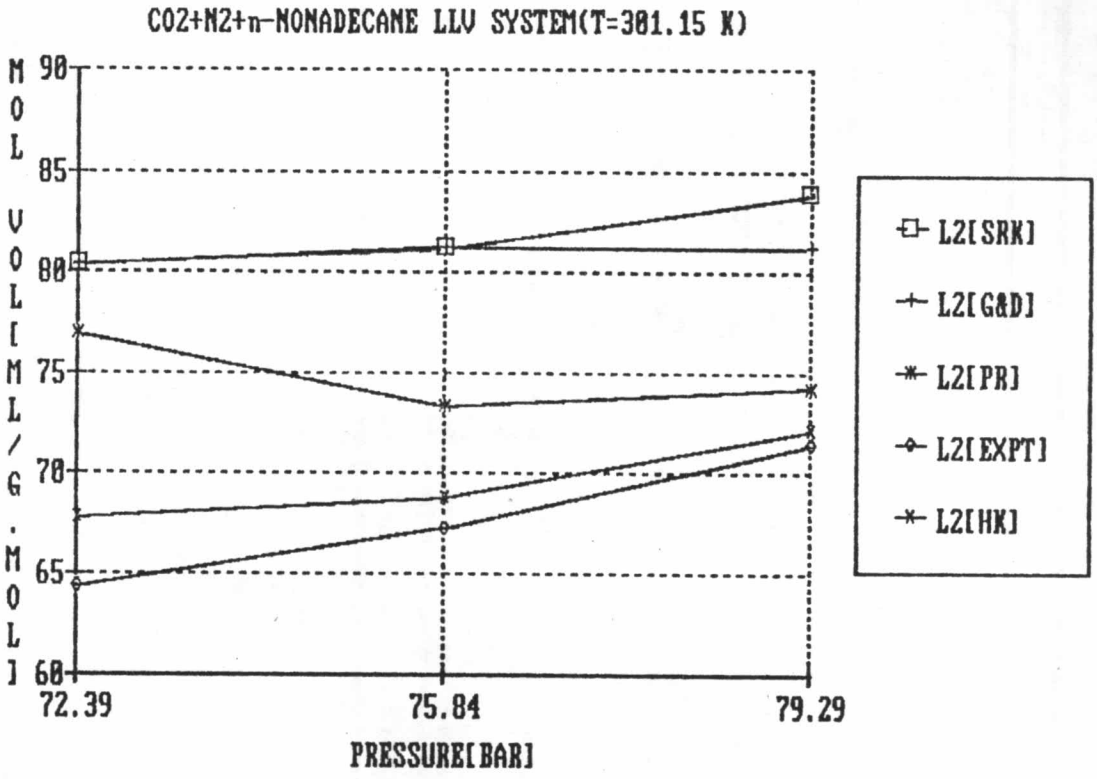

Figure 5.31 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for L'' phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]

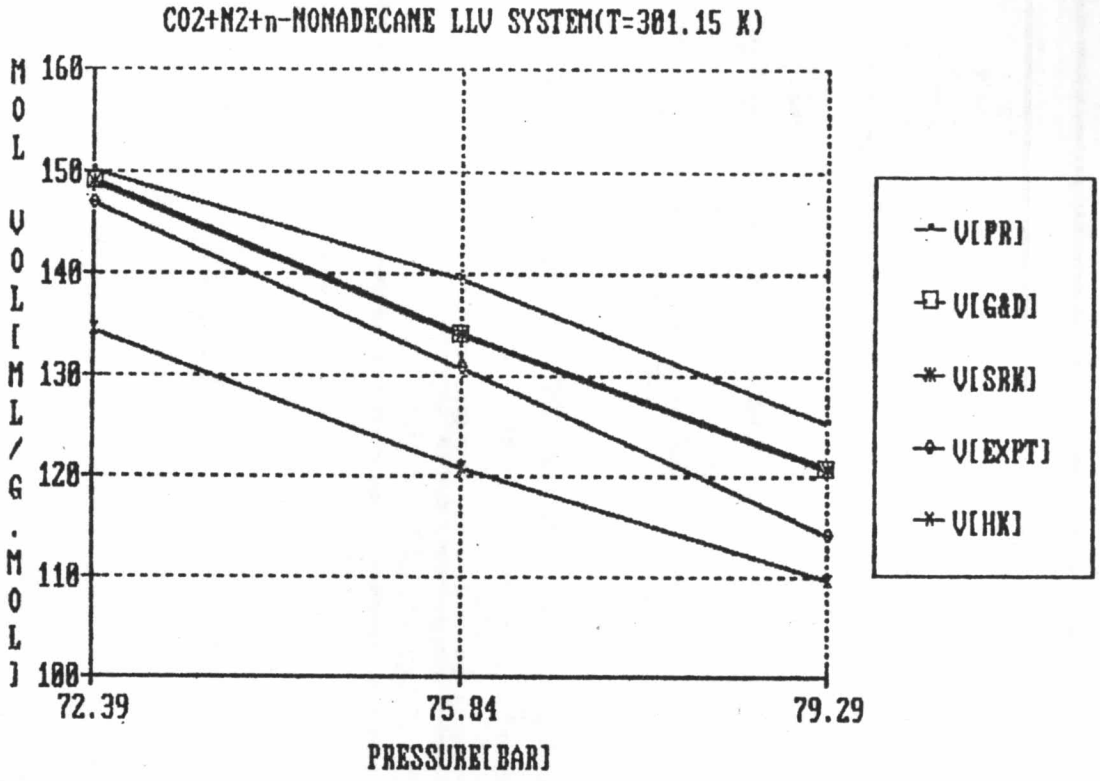

Figure 5.32 Comparisons of experimental and predicted molar volume by SRK,HK,G&D and PR equations of state(k_{ij}=0) as a function of pressure for vapor phase of CO_2(1)+N_2(2)+n-Nonadecane(3)system.

[Data from Fall,D.J. and Luke,K.D.(1986).]