**SUPPLEMENTARY DATABASE FOR A PAPER ‘PHASE DIAGRAM OF A BINARY MIXTURE IN A CLOSED CAVITY’ BY A. VOROBEV, D. LYUBIMOV AND T. LYUBIMOVA SUBMITTED FOR PUBLICATION AT THE JOURNAL PHYSICAL REVIEW E**

**FIGURE 1A (The phase diagram)**

|  |  |
| --- | --- |
| ***Dashed line (spinodal):*** **1/sqrt(Ca) q**6.34981871 08.28632069 0.13114595410.2228222 0.15997178912.1593237 0.17407952214.0958261 0.18223978616.0323277 0.18743151417.9688301 0.19095405919.9053307 0.19345955621.8418331 0.19530776123.7783356 0.19671134725.7148361 0.19780299127.6513386 0.19866912129.587841 0.1993680631.5243416 0.19994036933.4608421 0.20041497135.3973465 0.20081296637.333847 0.2011500339.2703476 0.20143802541.206852 0.20168605443.1433525 0.20190119745.0798531 0.20208901247.0163574 0.20225396848.952858 0.20239962650.8893585 0.20252887952.8258629 0.2026441154.7623634 0.20274728556.698864 0.20284001558.6353683 0.20292368560.5718689 0.20299942862.5083694 0.20306821264.44487 0.20313087166.3813782 0.20318810668.3178787 0.20324054470.2543793 0.20328867472.1908798 0.2033329974.1273804 0.20337384976.0638809 0.20341163978.0003891 0.20344664279.9368896 0.20347911181.8733902 0.20350931683.8098907 0.20353743485.7463913 0.20356367587.6828918 0.20358818889.6194 0.20361113591.5559006 0.20363262393.4924011 0.20365279995.4289017 0.20367175397.3654022 0.2036895999.3019028 0.203706399101.238411 0.203722239103.174911 0.203737199105.111412 0.203751341107.047913 0.203764722108.984413 0.203777388110.920914 0.203789398112.857422 0.203800797114.793922 0.203811616116.730423 0.203821912118.666924 0.203831702120.603424 0.203841031122.539925 0.203849912124.476433 0.203858376126.412933 0.203866467128.349426 0.203874186130.285934 0.203881562132.222443 0.203888625134.158936 0.203895375136.095444 0.203901842138.031937 0.203908041139.968445 0.203913987141.904953 0.203919679143.841446 0.203925163145.777954 0.203930408147.714447 0.203935459149.650955 0.203940317151.587448 0.203944981153.523956 0.203949481155.460464 0.203953803157.396957 0.203957975159.333466 0.203961983161.269958 0.203965858163.206467 0.203969598165.142975 0.203973204167.079468 0.203976676169.015976 0.203980044170.952469 0.203983292172.888977 0.203986421174.82547 0.203989461176.761978 0.203992397178.698486 0.203995243180.634979 0.203997985182.571487 0.204000652184.50798 0.20400323186.444489 0.204005733188.380997 0.204008147190.31749 0.204010502192.253998 0.204012781194.190491 0.204014987196.126999 0.204017133198.063492 0.204019219200 0.204021245 | ***Solid line (binodal):*****1/sqrt(Ca) q**7.07106781 0.1289999938.16496563 0.19200000210 0.25799998614.1421356 0.33500000822.3606796 0.39399999425 0.40400001431.622776 0.42199999150 0.44549998670.7106781 0.458200008100 0.467599988141.421356 0.474599987158.113892 0.476799995182.574188 0.478500009200 0.480699986 |

**FIGURE 1B (The time dependences of droplet like perturbations)**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Dash dot line:*****Time *r*d**0 0.05526406690.0399999991 0.05375042930.0799999982 0.05345943570.119999997 0.05308837070.159999996 0.05260335280.200000003 0.05195487660.239999995 0.05107888210.280000001 0.04991688950.319999993 0.04844670370.360000014 0.04661320520.400000006 0.04395882790.439999998 0.0385704190.479999989 0.224736303 | ***Dashed line:*** **Time *r*d**0 0.05623984710.0399999991 0.05491825190.0799999982 0.05485052240.119999997 0.05477394910.159999996 0.05468701570.200000003 0.05458752440.239999995 0.05447259550.280000001 0.05433840680.319999993 0.05417975040.360000014 0.05398939920.400000006 0.05375707150.439999998 0.05346775050.479999989 0.05309909580.519999981 0.0526175350.560000002 0.05197399110.600000024 0.05110463870.639999986 0.04995039850.680000007 0.04848821460.720000029 0.04666657370.75999999 0.04404771330.800000012 0.03876986350.839999974 0.210809112 | ***Thick solid line:*** **Time *r*d**0 0.05721646920.0399999991 0.05596457420.0799999982 0.05597266930.119999997 0.05598071220.159999996 0.05598896370.200000003 0.0559974350.239999995 0.05600612240.280000001 0.05601502950.319999993 0.05602415280.360000014 0.05603349210.400000006 0.05604305120.439999998 0.05605282260.479999989 0.05606281010.519999981 0.05607300620.560000002 0.05608341470.600000024 0.05609402430.639999986 0.05610483880.680000007 0.05611585450.720000029 0.05612706020.75999999 0.05613845590.800000012 0.05615003780.839999974 0.05616179480.879999995 0.05617372690.920000017 0.05618581920.959999979 0.05619807171 0.05621047691.03999996 0.05622302371.08000004 0.05623570461.12 0.05624851211.15999997 0.05626143521.20000005 0.05627446621.24000001 0.05628759791.27999997 0.05630081891.32000005 0.05631411451.36000001 0.05632748451.39999998 0.05634091051.44000006 0.05635438491.48000002 0.05636789651.51999998 0.05638143791.55999994 0.0563949981.60000002 0.05640856181.63999999 0.05642212551.67999995 0.05643567441.72000003 0.05644919721.75999999 0.05646269021.79999995 0.05647613851.84000003 0.05648953471.88 0.05650286751.91999996 0.05651613321.96000004 0.05652931332 0.05654240772.03999996 0.05655540532.07999992 0.05656829852.11999989 0.056581082.16000009 0.05659374222.20000005 0.05660627782.24000001 0.0566186832.27999997 0.05663095042.31999993 0.05664306882.3599999 0.05665504192.4000001 0.05666686222.44000006 0.05667851872.48000002 0.05669001492.51999998 0.05670134722.55999994 0.05671250452.5999999 0.05672349042.6400001 0.05673430112.68000007 0.05674493312.72000003 0.05675538632.75999999 0.05676565692.79999995 0.05677574132.83999991 0.05678564312.88000011 0.05679536242.92000008 0.05680489542.96000004 0.05681423843 0.05682339893.03999996 0.05683237313.07999992 .05684116113.11999989 0.05684976653.16000009 0.05685818943.20000005 0.0568664263.24000001 0.05687448383.27999997 0.05688236283.31999993 0.0568900633.3599999 0.05689758433.4000001 0.05690493433.44000006 0.0569121133.48000002 0.05691911653.51999998 0.05692595623.55999994 0.05693262823.5999999 0.05693913623.6400001 0.05694548413.68000007 0.05695167183.72000003 0.05695770683.75999999 0.05696358533.79999995 0.05696931483.83999991 0.05697489533.88000011 0.05698033053.92000008 0.05698562413.96000004 0.05699077624 0.0569957942 | ***Thin solid line:*****Time *r*d**0 0.06113250550.0399999991 0.05973705650.0799999982 0.05965188150.119999997 0.05956695970.159999996 0.05948274960.200000003 0.05939953030.239999995 0.05931756270.280000001 0.05923707410.319999993 0.0591582730.360000014 0.05908133090.400000006 0.05900639670.439999998 0.05893358960.479999989 0.05886299910.519999981 0.05879469220.560000002 0.05872871350.600000024 0.05866508190.639999986 0.05860380080.680000007 0.05854485560.720000029 0.05848822370.75999999 0.05843386050.800000012 0.05838172140.839999974 0.05833175030.879999995 0.05828388780.920000017 0.05823805930.959999979 0.05819420521 0.05815224721.03999996 0.05811211841.08000004 0.05807374051.12 0.05803704631.15999997 0.05800196161.20000005 0.05796841531.24000001 0.05793634431.27999997 0.05790567771.32000005 0.05787635221.36000001 0.05784830821.39999998 0.05782148611.44000006 0.05779582261.48000002 0.0577712731.51999998 0.05774777761.55999994 0.05772529171.60000002 0.05770376321.63999999 0.05768314751.67999995 0.05766340351.72000003 0.05764448641.75999999 0.05762636291.79999995 0.05760899191.84000003 0.05759233981.88 0.05757637321.91999996 0.05756106231.96000004 0.05754636972 0.05753227322.03999996 0.0575187432.07999992 0.05750575662.11999989 0.05749328812.16000009 0.05748131132.20000005 0.05746980762.24000001 0.05745875462.27999997 0.05744813012.31999993 0.05743792282.3599999 0.05742810672.4000001 0.05741866682.44000006 0.05740958822.48000002 0.05740085622.51999998 0.05739245562.55999994 0.0573843682.5999999 0.05737658962.6400001 0.05736909812.68000007 0.05736188592.72000003 0.0573549422.75999999 0.05734825512.79999995 0.05734181032.83999991 0.0573356042.88000011 0.05732962492.92000008 0.05732386192.96000004 0.05731830753 0.05731295423.03999996 0.05730779473.07999992 0.05730281773.11999989 0.05729801953.16000009 0.05729339273.20000005 0.05728892983.24000001 0.05728462343.27999997 0.05728046973.31999993 0.0572764653.3599999 0.05727259813.4000001 0.05726886543.44000006 0.05726526313.48000002 0.05726178743.51999998 0.05725843463.55999994 0.05725519363.5999999 0.05725206813.6400001 0.05724904693.68000007 0.05724613373.72000003 0.05724331743.75999999 0.05724059793.79999995 0.05723797163.83999991 0.05723543473.88000011 0.05723298713.92000008 0.05723061793.96000004 0.05722833054 0.0572261214 |

**FIGURE 1C (The size of the critical droplet)**

**1/sqrt(Ca) *r*c**

7.07106781 0.33885926

8.16496563 0.289479047

10 0.241295964

14.1421356 0.179559171

22.3606796 0.131140456

25 0.123079672

31.622776 0.103059895

50 0.0865800306

70.7106781 0.0722235218

100 0.0569957942

141.421356 0.0523239449

158.113892 0.0506460331

182.574188 0.0471821241

200 0.044284761

**FIGURE 1D (The interface thickness of the critical droplet)**

**1/sqrt(Ca) *δ*c**

7.07106781 0.112799853

8.16496563 0.0998828039

10 0.0838693753

14.1421356 0.0597784594

22.3606796 0.0369522758

25 0.0330115631

31.622776 0.0261308216

50 0.0165471956

70.7106781 0.0118452432

100 0.00861434732

141.421356 0.00604239805

158.113892 0.00546956994

182.574188 0.00478701619

200 0.00438993098

**FIGURE 1E (The surface tension for the critical droplet)**

**1/sqrt(Ca) *σ*c**

7.07106781 0.0013596958

8.16496563 0.00452113245

10 0.00717893755

14.1421356 0.00830714684

22.3606796 0.00757510262

25 0.0071433275

31.622776 0.00590264704

50 0.00419686222

70.7106781 0.00301661249

100 0.00210086792

141.421356 0.0015304496

158.113892 0.00135871081

182.574188 0.00116921938

200 0.00106423919

**FIGURE 1F (The average concentrations in the droplet phase and outside the droplet)**

**1/sqrt(Ca) *C*1 *C*2**

7.07106781 -0.00344705046 0.13080357

8.16496563 -0.050029736 0.217306241

10 -0.107583202 0.300245166

14.1421356 -0.156840131 0.371545345

22.3606796 -0.228447348 0.42386362

25 -0.233493984 0.432839751

31.622776 -0.257560253 0.443130195

50 -0.32520476 0.462917507

70.7106781 -0.341209888 0.471281111

100 -0.361185819 0.476056159

141.421356 -0.390241891 0.482082605

158.113892 -0.408649534 0.483820766

182.574188 -0.411562085 0.485502362

200 -0.412141681 0.486201972