

Experimental Uncertainty Analysis Dataset for Characterizing the Validation Uncertainty of a Heart Failure Computational Model

Nomenclature

HR – heart rate

CO – cardiac output

P – pressure

Q – flow rate

LV – left ventricle

LA – left atrium

Ao – aorta

μ – dynamic viscosity

ρ – density

T_0 – cardiac cycle duration

TR – total resistance (or systemic vascular resistance)

V_s – total fluid volume

σ – standard deviation (std. dev.)

Target Heart Failure Condition

Condition	HR (bpm)	CO (L/min)	P _{systolic} / P _{diastolic} (mmHg)	P _{LA} (mmHg)
Cardiogenic shock	110	3	80/50	> 15

Blood Analog Fluid Properties

1. Viscosity

Trial	μ (cP)
1	3.94 ± 0.19
2	3.96 ± 0.2
3	3.89 ± 0.19
4	3.85 ± 0.19
5	3.99 ± 0.18
6	4.1 ± 0.15
Mean \pm Std. Dev.	3.95 ± 0.08

Note: Viscosity values for each trial are computed by averaging viscosity data points measured over a range of 0 – 1,500 (sec^{-1}) shear rates.

2. Density, $\rho = 1.095 \text{ g/cm}^3$

Experimental Uncertainty Analysis Data

Summary Table of Key Results

Replicate Test #	Fluid Temp ($^{\circ}\text{C}$)	V_s (ml)	CO (L/min)	T_0 (sec)	$P_{\text{systolic}}/P_{\text{diastolic}}$ (mmHg)	P_{LA} (mmHg)	TR (dynes.sec/cm⁵)
1	21.6	3,400	3.3	0.547	83/57	16	1376
2	21.8	3,480	3.4	0.549	83/58	17	1371
3	21.9	3,500	3.3	0.547	84/58	18	1371
4	22.3	3,500	3.2	0.549	84/58	17	1373
5	22.1	3,500	3.0	0.546	83/57	18	1349
6	22.2	3,540	3.1	0.547	84/58	18	1344
7	22.3	3,560	3.0	0.547	83/57	18	1347
8	22.2	3,560	2.8	0.546	85/58	18	1319
9	22.2	3,560	3.1	0.548	83/57	17	1339
10	22.1	3,560	2.9	0.547	84/57	17	1360

Note: P values are the mean values, i.e., time-averaged over the cardiac cycle.

Experimental Uncertainty Values for Input Parameter Uncertainty Quantification (u_{input})

Note: The data below is primarily intended to be used as inputs for a computer model sensitivity analysis using the local Sensitivity Coefficient Approach. However, the data below may also be used for conducting a global Monte Carlo-based input parameter uncertainty propagation by assuming a normal distribution for the experimental uncertainties.

1. % Uncertainty in TR, $\sigma_{\text{TR}}/\text{TR} = 2.68\%$ [$\text{TR} = 1,354.80 \text{ dynes.sec/cm}^5$, $\sigma_{\text{TR}} = 36.37 \text{ dynes.sec/cm}^5$]
2. % Uncertainty in T_0 , $\sigma_{T_0}/T_0 = 0.4\%$ [$T_0 = 0.547 \text{ sec}$, $\sigma_{T_0} = 0.002 \text{ sec}$]

3. % Uncertainty in T_0 , $\sigma_{V_S}/V_S = 2.87\%$ [$V_S = 3,516$ ml, $\sigma_{V_S} = 102.94$ ml]

Note: TR , T_0 , V_S are the mean values, i.e., time-averaged over the cardiac cycle. σ values represent a 95% confidence interval.

Time-Series Data of Mean and Uncertainty Values of Experimental Output Parameters (u_{output})

Note: Std. Dev. (or uncertainty) values represent a 95% confidence interval.

Note: Uncertainty bounds can be computed from the data below as: Upper Bound = Mean + Std. Dev., Lower Bound = Mean - Std. Dev.

Time (sec)	P_{LA} (mmHg)		P_{LV} (mmHg)		P_{Ao} (mmHg)		CO (or Q_{Ao}) (L/min)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
0	-2.45	1.78	37.86	2.08	57.69	1.02	0.13	0.74
0.001	-0.43	1.98	42.13	2.07	57.68	1.02	0.13	0.75
0.002	4.66	1.78	46.61	1.97	57.66	1.02	0.12	0.77
0.003	10.34	1.39	50.79	1.85	57.65	1.02	0.13	0.77
0.004	14.22	1.09	54.28	1.76	57.63	1.02	0.15	0.77
0.005	15.19	0.95	56.95	1.75	57.62	1.01	0.17	0.77
0.006	13.67	0.9	59.02	1.83	57.61	1.01	0.19	0.75
0.007	11.15	1.04	61.02	2.02	57.6	1.01	0.2	0.73
0.008	9.56	1.35	63.59	2.29	57.59	1	0.21	0.7
0.009	10.26	1.55	67.26	2.58	57.59	1	0.21	0.67
0.01	13.12	1.41	72.17	2.79	57.6	1	0.22	0.66
0.011	16.61	1.06	77.93	2.79	57.64	0.99	0.24	0.67
0.012	18.92	0.8	83.79	2.56	57.7	0.98	0.26	0.69
0.013	19.08	0.77	88.88	2.17	57.79	0.98	0.3	0.7
0.014	17.28	0.75	92.62	1.73	57.92	0.97	0.35	0.71
0.015	14.63	0.74	94.81	1.38	58.08	0.97	0.42	0.7
0.016	12.65	0.97	95.66	1.18	58.27	0.97	0.51	0.69
0.017	12.48	1.3	95.66	1.14	58.5	0.97	0.62	0.67
0.018	14.24	1.45	95.4	1.19	58.74	0.97	0.75	0.66
0.019	16.94	1.34	95.34	1.29	58.99	0.97	0.89	0.66
0.02	19.18	1.08	95.67	1.4	59.25	0.98	1.04	0.68
0.021	20.03	0.86	96.31	1.5	59.51	0.98	1.21	0.7
0.022	19.3	0.72	96.95	1.56	59.77	0.98	1.38	0.73
0.023	17.57	0.66	97.23	1.61	60	0.99	1.55	0.75
0.024	15.8	0.72	96.92	1.68	60.23	1	1.73	0.77
0.025	14.83	0.91	95.9	1.78	60.43	1	1.91	0.8
0.026	15.03	1.09	94.27	1.91	60.62	1.02	2.1	0.83

0.027	16.11	1.18	92.19	2.06	60.79	1.02	2.3	0.85
0.028	17.38	1.17	89.87	2.18	60.95	1.03	2.5	0.87
0.029	18.22	1.1	87.49	2.25	61.09	1.04	2.72	0.87
0.03	18.35	1.04	85.13	2.26	61.23	1.06	2.94	0.85
0.031	17.91	1.01	82.86	2.21	61.36	1.06	3.15	0.82
0.032	17.34	1.02	80.68	2.12	61.5	1.07	3.37	0.78
0.033	17.05	1.04	78.61	2.01	61.64	1.08	3.59	0.75
0.034	17.25	1.05	76.69	1.89	61.78	1.09	3.8	0.72
0.035	17.8	1.01	74.95	1.78	61.93	1.1	4.02	0.69
0.036	18.38	0.93	73.44	1.69	62.1	1.1	4.23	0.68
0.037	18.66	0.85	72.19	1.61	62.29	1.1	4.43	0.67
0.038	18.52	0.81	71.16	1.55	62.49	1.1	4.63	0.66
0.039	18.06	0.82	70.29	1.49	62.71	1.1	4.82	0.65
0.04	17.54	0.89	69.51	1.44	62.94	1.1	5	0.65
0.041	17.25	1	68.76	1.38	63.19	1.1	5.18	0.65
0.042	17.33	1.1	68.04	1.3	63.45	1.09	5.37	0.66
0.043	17.72	1.14	67.38	1.2	63.72	1.09	5.55	0.67
0.044	18.22	1.11	66.89	1.08	63.99	1.09	5.74	0.68
0.045	18.6	1.04	66.64	0.99	64.26	1.08	5.93	0.68
0.046	18.7	0.96	66.72	0.94	64.54	1.08	6.11	0.69
0.047	18.54	0.88	67.15	0.96	64.81	1.08	6.27	0.7
0.048	18.22	0.84	67.87	1	65.08	1.08	6.42	0.74
0.049	17.9	0.83	68.81	1.04	65.36	1.07	6.55	0.78
0.05	17.7	0.85	69.83	1.07	65.63	1.07	6.67	0.83
0.051	17.67	0.88	70.84	1.07	65.91	1.07	6.78	0.88
0.052	17.76	0.92	71.77	1.06	66.2	1.06	6.88	0.92
0.053	17.88	0.95	72.61	1.06	66.49	1.06	6.98	0.97
0.054	17.96	0.97	73.36	1.08	66.79	1.06	7.08	1.01
0.055	17.95	0.98	74.09	1.13	67.11	1.05	7.2	1.03
0.056	17.89	1	74.82	1.21	67.44	1.04	7.32	1.01
0.057	17.81	1	75.6	1.32	67.78	1.04	7.44	0.98
0.058	17.78	0.99	76.42	1.43	68.13	1.03	7.57	0.93
0.059	17.79	0.97	77.26	1.55	68.49	1.03	7.71	0.88
0.06	17.82	0.94	78.09	1.65	68.86	1.03	7.84	0.85
0.061	17.85	0.91	78.89	1.73	69.24	1.02	7.97	0.83
0.062	17.82	0.88	79.61	1.78	69.63	1.02	8.09	0.81
0.063	17.74	0.88	80.25	1.81	70.02	1.01	8.2	0.8
0.064	17.62	0.88	80.79	1.82	70.41	1.01	8.32	0.78
0.065	17.5	0.91	81.24	1.83	70.81	1.01	8.45	0.78
0.066	17.42	0.93	81.6	1.84	71.21	1	8.59	0.8
0.067	17.4	0.95	81.88	1.84	71.6	1	8.74	0.83

0.068	17.45	0.95	82.08	1.85	72	1	8.88	0.86
0.069	17.52	0.94	82.2	1.86	72.39	1	9.02	0.87
0.07	17.58	0.91	82.26	1.86	72.78	0.99	9.15	0.85
0.071	17.62	0.89	82.26	1.84	73.17	0.99	9.27	0.82
0.072	17.61	0.87	82.2	1.8	73.56	0.99	9.39	0.78
0.073	17.57	0.86	82.09	1.74	73.94	0.99	9.5	0.75
0.074	17.52	0.87	81.93	1.68	74.32	0.99	9.61	0.74
0.075	17.49	0.88	81.72	1.64	74.69	0.99	9.71	0.75
0.076	17.48	0.9	81.44	1.62	75.05	0.99	9.82	0.78
0.077	17.5	0.92	81.09	1.64	75.42	0.99	9.93	0.81
0.078	17.54	0.94	80.68	1.69	75.77	0.99	10.04	0.85
0.079	17.59	0.96	80.21	1.75	76.11	1	10.15	0.89
0.08	17.63	0.98	79.71	1.82	76.45	0.99	10.24	0.94
0.081	17.66	0.99	79.18	1.87	76.77	0.99	10.33	0.98
0.082	17.69	1.01	78.65	1.91	77.09	0.99	10.42	1
0.083	17.73	1.01	78.13	1.94	77.39	0.98	10.51	1.01
0.084	17.77	1.02	77.64	1.96	77.67	0.98	10.6	1.01
0.085	17.81	1.02	77.17	1.98	77.94	0.97	10.7	1.01
0.086	17.84	1.01	76.74	1.98	78.2	0.96	10.8	1.02
0.087	17.86	1.01	76.34	1.98	78.44	0.96	10.88	1.03
0.088	17.87	1.01	75.95	1.96	78.66	0.95	10.96	1.05
0.089	17.85	1.01	75.59	1.93	78.88	0.94	11.04	1.06
0.09	17.83	1.01	75.24	1.87	79.08	0.94	11.11	1.06
0.091	17.82	1.01	74.91	1.79	79.26	0.93	11.19	1.06
0.092	17.83	1.02	74.6	1.69	79.44	0.93	11.27	1.05
0.093	17.84	1.02	74.34	1.58	79.61	0.92	11.34	1.03
0.094	17.86	1.01	74.11	1.47	79.78	0.91	11.4	1
0.095	17.87	1	73.93	1.36	79.94	0.91	11.45	0.97
0.096	17.86	0.99	73.79	1.27	80.1	0.9	11.5	0.96
0.097	17.84	0.98	73.69	1.2	80.25	0.89	11.55	0.96
0.098	17.81	0.97	73.64	1.15	80.4	0.89	11.61	1.01
0.099	17.78	0.96	73.61	1.13	80.55	0.89	11.67	1.06
0.1	17.75	0.95	73.61	1.13	80.7	0.88	11.72	1.1
0.101	17.72	0.93	73.62	1.15	80.85	0.88	11.77	1.11
0.102	17.7	0.92	73.64	1.17	81	0.87	11.8	1.11
0.103	17.69	0.91	73.67	1.19	81.15	0.88	11.83	1.1
0.104	17.68	0.91	73.71	1.2	81.3	0.87	11.86	1.09
0.105	17.67	0.91	73.75	1.21	81.44	0.88	11.88	1.08
0.106	17.65	0.91	73.79	1.21	81.59	0.88	11.91	1.07
0.107	17.64	0.91	73.84	1.21	81.72	0.88	11.93	1.04
0.108	17.62	0.91	73.88	1.21	81.86	0.88	11.96	1.01

0.109	17.61	0.91	73.93	1.22	81.99	0.89	11.97	0.98
0.11	17.61	0.91	73.97	1.23	82.11	0.89	11.99	0.97
0.111	17.61	0.9	74	1.23	82.23	0.89	11.99	0.96
0.112	17.61	0.9	74.01	1.23	82.34	0.9	11.99	0.95
0.113	17.62	0.91	74.01	1.23	82.45	0.9	11.99	0.95
0.114	17.63	0.92	74	1.23	82.55	0.91	11.99	0.94
0.115	17.64	0.93	73.98	1.23	82.65	0.91	11.99	0.94
0.116	17.65	0.95	73.94	1.23	82.74	0.92	11.99	0.94
0.117	17.67	0.95	73.89	1.23	82.82	0.93	11.97	0.95
0.118	17.69	0.96	73.84	1.24	82.9	0.93	11.95	0.97
0.119	17.71	0.96	73.78	1.24	82.98	0.94	11.92	0.97
0.12	17.74	0.96	73.72	1.24	83.05	0.95	11.9	0.96
0.121	17.76	0.97	73.67	1.25	83.11	0.96	11.87	0.94
0.122	17.76	0.98	73.62	1.25	83.18	0.97	11.83	0.91
0.123	17.76	0.99	73.57	1.26	83.24	0.97	11.79	0.92
0.124	17.75	0.99	73.53	1.26	83.29	0.98	11.74	0.94
0.125	17.75	0.98	73.48	1.27	83.34	0.99	11.68	0.98
0.126	17.75	0.98	73.44	1.29	83.38	0.99	11.62	1.01
0.127	17.75	0.98	73.41	1.3	83.42	1	11.56	1.03
0.128	17.76	0.99	73.38	1.3	83.45	1	11.51	1.03
0.129	17.76	1	73.36	1.31	83.47	1	11.46	1.01
0.13	17.75	1.01	73.36	1.32	83.49	1	11.41	0.99
0.131	17.73	1.01	73.36	1.31	83.5	1.01	11.36	0.96
0.132	17.71	1.01	73.39	1.31	83.5	1.01	11.3	0.92
0.133	17.69	1	73.43	1.3	83.5	1	11.24	0.87
0.134	17.66	0.98	73.48	1.3	83.48	1	11.17	0.84
0.135	17.64	0.98	73.54	1.3	83.46	1	11.1	0.84
0.136	17.61	0.97	73.61	1.31	83.44	1	11.03	0.87
0.137	17.58	0.96	73.68	1.32	83.41	1	10.96	0.91
0.138	17.55	0.96	73.75	1.33	83.37	0.99	10.89	0.94
0.139	17.52	0.95	73.82	1.34	83.32	0.99	10.81	0.95
0.14	17.5	0.94	73.89	1.35	83.27	0.98	10.73	0.95
0.141	17.48	0.93	73.97	1.35	83.22	0.98	10.64	0.94
0.142	17.47	0.92	74.07	1.35	83.16	0.98	10.55	0.94
0.143	17.46	0.92	74.19	1.33	83.1	0.97	10.47	0.95
0.144	17.44	0.92	74.32	1.31	83.03	0.97	10.38	0.95
0.145	17.42	0.92	74.46	1.29	82.96	0.96	10.3	0.95
0.146	17.38	0.93	74.61	1.26	82.89	0.96	10.21	0.94
0.147	17.35	0.93	74.75	1.24	82.81	0.95	10.13	0.93
0.148	17.33	0.93	74.88	1.22	82.73	0.94	10.04	0.94
0.149	17.32	0.93	75.01	1.2	82.64	0.94	9.95	0.94

0.15	17.32	0.93	75.13	1.19	82.55	0.93	9.84	0.94
0.151	17.32	0.92	75.24	1.17	82.46	0.93	9.73	0.94
0.152	17.32	0.93	75.35	1.16	82.36	0.92	9.63	0.94
0.153	17.32	0.93	75.46	1.14	82.26	0.92	9.53	0.96
0.154	17.31	0.94	75.56	1.13	82.15	0.91	9.43	0.99
0.155	17.31	0.94	75.67	1.12	82.05	0.91	9.34	1.02
0.156	17.31	0.95	75.78	1.11	81.94	0.9	9.25	1.04
0.157	17.31	0.95	75.88	1.1	81.82	0.9	9.15	1.05
0.158	17.32	0.95	75.97	1.1	81.71	0.9	9.06	1.06
0.159	17.34	0.95	76.06	1.11	81.59	0.9	8.96	1.07
0.16	17.35	0.95	76.14	1.12	81.47	0.9	8.87	1.09
0.161	17.36	0.95	76.21	1.14	81.36	0.9	8.76	1.11
0.162	17.37	0.95	76.28	1.15	81.24	0.89	8.64	1.14
0.163	17.39	0.96	76.33	1.16	81.12	0.89	8.52	1.15
0.164	17.41	0.95	76.39	1.18	81	0.89	8.4	1.15
0.165	17.43	0.95	76.44	1.2	80.89	0.89	8.28	1.14
0.166	17.45	0.95	76.49	1.23	80.77	0.89	8.16	1.14
0.167	17.47	0.95	76.54	1.25	80.66	0.89	8.06	1.15
0.168	17.49	0.95	76.58	1.28	80.55	0.89	7.96	1.15
0.169	17.5	0.94	76.63	1.31	80.44	0.89	7.87	1.15
0.17	17.51	0.94	76.67	1.35	80.33	0.89	7.77	1.14
0.171	17.53	0.93	76.71	1.38	80.21	0.89	7.67	1.11
0.172	17.54	0.93	76.74	1.4	80.1	0.88	7.56	1.08
0.173	17.56	0.92	76.78	1.43	79.99	0.88	7.45	1.06
0.174	17.57	0.92	76.81	1.45	79.87	0.89	7.33	1.06
0.175	17.58	0.93	76.84	1.47	79.76	0.88	7.21	1.07
0.176	17.59	0.92	76.86	1.49	79.64	0.89	7.08	1.07
0.177	17.6	0.92	76.87	1.51	79.52	0.88	6.95	1.08
0.178	17.61	0.91	76.87	1.51	79.39	0.88	6.84	1.11
0.179	17.62	0.91	76.87	1.51	79.27	0.88	6.73	1.14
0.18	17.64	0.91	76.85	1.51	79.14	0.88	6.63	1.17
0.181	17.66	0.91	76.83	1.5	79.01	0.88	6.54	1.17
0.182	17.67	0.91	76.81	1.49	78.88	0.88	6.43	1.15
0.183	17.68	0.92	76.77	1.47	78.75	0.89	6.32	1.09
0.184	17.69	0.93	76.73	1.47	78.62	0.88	6.2	1.02
0.185	17.7	0.93	76.68	1.45	78.49	0.89	6.08	0.98
0.186	17.71	0.92	76.62	1.44	78.36	0.88	5.97	0.97
0.187	17.71	0.93	76.54	1.42	78.23	0.89	5.85	0.99
0.188	17.73	0.93	76.45	1.4	78.09	0.89	5.73	1.01
0.189	17.74	0.93	76.34	1.38	77.97	0.89	5.62	1.01
0.19	17.76	0.94	76.23	1.36	77.83	0.89	5.5	1

0.191	17.78	0.95	76.1	1.33	77.71	0.89	5.39	0.99
0.192	17.79	0.95	75.96	1.31	77.58	0.89	5.28	0.98
0.193	17.8	0.95	75.82	1.29	77.45	0.88	5.17	0.97
0.194	17.82	0.95	75.67	1.27	77.32	0.89	5.05	0.95
0.195	17.83	0.95	75.52	1.25	77.19	0.89	4.93	0.93
0.196	17.84	0.95	75.37	1.23	77.07	0.88	4.81	0.9
0.197	17.86	0.96	75.22	1.21	76.94	0.88	4.7	0.89
0.198	17.87	0.96	75.06	1.2	76.81	0.88	4.6	0.9
0.199	17.87	0.97	74.9	1.19	76.68	0.88	4.5	0.93
0.2	17.88	0.96	74.74	1.18	76.56	0.88	4.39	0.96
0.201	17.89	0.96	74.58	1.17	76.43	0.87	4.28	0.96
0.202	17.9	0.96	74.41	1.16	76.3	0.87	4.17	0.95
0.203	17.91	0.95	74.24	1.15	76.18	0.87	4.06	0.92
0.204	17.92	0.95	74.07	1.14	76.06	0.87	3.95	0.9
0.205	17.94	0.96	73.9	1.13	75.93	0.87	3.84	0.9
0.206	17.95	0.95	73.72	1.12	75.81	0.87	3.74	0.9
0.207	17.96	0.96	73.56	1.11	75.69	0.86	3.65	0.91
0.208	17.96	0.96	73.39	1.1	75.57	0.86	3.55	0.91
0.209	17.97	0.95	73.23	1.09	75.45	0.87	3.46	0.93
0.21	17.97	0.96	73.06	1.07	75.34	0.87	3.36	0.95
0.211	17.97	0.96	72.89	1.05	75.23	0.87	3.27	0.98
0.212	17.97	0.96	72.73	1.04	75.11	0.87	3.17	1.02
0.213	17.97	0.96	72.55	1.04	75	0.88	3.07	1.04
0.214	17.97	0.96	72.37	1.05	74.89	0.88	2.98	1.04
0.215	17.97	0.96	72.18	1.09	74.78	0.89	2.87	1.02
0.216	17.97	0.96	71.98	1.15	74.67	0.89	2.76	0.99
0.217	17.97	0.95	71.78	1.22	74.55	0.9	2.66	0.95
0.218	17.97	0.95	71.58	1.3	74.44	0.91	2.55	0.92
0.219	17.97	0.95	71.39	1.37	74.32	0.91	2.44	0.88
0.22	17.96	0.96	71.19	1.42	74.21	0.92	2.34	0.84
0.221	17.95	0.96	70.98	1.43	74.09	0.93	2.24	0.81
0.222	17.92	0.95	70.76	1.43	73.97	0.94	2.14	0.8
0.223	17.89	0.94	70.52	1.44	73.84	0.94	2.05	0.82
0.224	17.85	0.94	70.23	1.49	73.72	0.95	1.96	0.85
0.225	17.82	0.95	69.91	1.6	73.6	0.96	1.86	0.87
0.226	17.8	0.96	69.54	1.76	73.48	0.96	1.75	0.86
0.227	17.79	0.98	69.13	1.98	73.36	0.97	1.65	0.82
0.228	17.8	0.99	68.7	2.24	73.24	0.98	1.56	0.76
0.229	17.8	0.99	68.24	2.52	73.12	0.98	1.48	0.71
0.23	17.81	0.99	67.76	2.82	73.01	1	1.41	0.66
0.231	17.8	0.98	67.27	3.13	72.89	1.01	1.35	0.6

0.232	17.78	0.97	66.76	3.47	72.77	1.03	1.29	0.54
0.233	17.74	0.93	66.22	3.86	72.66	1.05	1.24	0.47
0.234	17.69	0.93	65.62	4.3	72.54	1.07	1.19	0.41
0.235	17.64	0.97	64.95	4.8	72.43	1.09	1.14	0.37
0.236	17.58	1.02	64.18	5.32	72.32	1.12	1.09	0.35
0.237	17.55	1.06	63.33	5.84	72.21	1.14	1.04	0.36
0.238	17.55	1.1	62.39	6.34	72.1	1.16	0.98	0.39
0.239	17.57	1.19	61.39	6.75	71.99	1.17	0.93	0.43
0.24	17.61	1.28	60.34	7.05	71.89	1.17	0.87	0.47
0.241	17.63	1.32	59.27	7.25	71.78	1.17	0.82	0.5
0.242	17.64	1.24	58.17	7.41	71.68	1.16	0.76	0.53
0.243	17.61	1.1	57.04	7.6	71.58	1.15	0.7	0.56
0.244	17.57	0.96	55.88	7.86	71.47	1.13	0.64	0.58
0.245	17.52	0.88	54.67	8.21	71.37	1.11	0.57	0.6
0.246	17.5	0.88	53.4	8.61	71.27	1.08	0.52	0.61
0.247	17.49	0.97	52.06	9.01	71.16	1.06	0.48	0.62
0.248	17.49	1.13	50.67	9.38	71.05	1.05	0.45	0.62
0.249	17.47	1.3	49.21	9.7	70.94	1.04	0.41	0.64
0.25	17.43	1.39	47.71	9.95	70.84	1.03	0.38	0.66
0.251	17.35	1.39	46.17	10.12	70.73	1.03	0.34	0.67
0.252	17.26	1.34	44.6	10.2	70.62	1.04	0.31	0.67
0.253	17.17	1.29	43.01	10.2	70.51	1.05	0.28	0.67
0.254	17.08	1.26	41.42	10.15	70.41	1.07	0.25	0.66
0.255	17	1.16	39.83	10.09	70.3	1.09	0.23	0.65
0.256	16.89	0.93	38.22	10.05	70.2	1.11	0.2	0.64
0.257	16.73	0.75	36.58	9.99	70.11	1.13	0.17	0.63
0.258	16.52	0.91	34.92	9.83	70.02	1.15	0.14	0.62
0.259	16.28	1.23	33.21	9.57	69.93	1.17	0.11	0.61
0.26	16.04	1.43	31.46	9.21	69.85	1.18	0.09	0.61
0.261	15.85	1.51	29.71	8.86	69.78	1.19	0.07	0.61
0.262	15.69	1.59	27.98	8.55	69.7	1.19	0.05	0.63
0.263	15.56	1.73	26.3	8.28	69.63	1.2	0.03	0.65
0.264	15.4	1.85	24.7	8.02	69.55	1.2	0.01	0.66
0.265	15.17	1.89	23.17	7.77	69.48	1.19	0	0.64
0.266	14.87	1.95	21.71	7.61	69.4	1.19	-0.01	0.62
0.267	14.52	2.06	20.29	7.55	69.32	1.19	-0.01	0.6
0.268	14.16	2.12	18.91	7.54	69.24	1.19	0	0.6
0.269	13.87	2.02	17.55	7.46	69.16	1.2	0.01	0.61
0.27	13.65	1.86	16.23	7.18	69.07	1.22	0.02	0.64
0.271	13.5	1.75	14.97	6.7	68.98	1.23	0.03	0.66
0.272	13.38	1.69	13.79	6.06	68.88	1.25	0.04	0.68

0.273	13.23	1.62	12.7	5.39	68.79	1.26	0.05	0.68
0.274	13.05	1.61	11.75	4.82	68.7	1.28	0.05	0.67
0.275	12.84	1.76	10.93	4.43	68.6	1.3	0.04	0.66
0.276	12.64	1.93	10.23	4.23	68.51	1.32	0.03	0.64
0.277	12.49	1.94	9.64	4.2	68.42	1.33	0.02	0.61
0.278	12.41	1.82	9.15	4.26	68.33	1.34	0.01	0.57
0.279	12.38	1.72	8.74	4.31	68.25	1.35	0.01	0.54
0.28	12.4	1.73	8.41	4.26	68.17	1.35	0	0.52
0.281	12.43	1.82	8.16	4.08	68.09	1.34	-0.01	0.52
0.282	12.45	1.92	8	3.76	68.02	1.34	-0.02	0.52
0.283	12.45	2.02	7.91	3.4	67.95	1.34	-0.03	0.5
0.284	12.45	2.05	7.89	3.09	67.88	1.33	-0.02	0.47
0.285	12.48	1.99	7.95	2.93	67.82	1.33	0.01	0.44
0.286	12.56	1.87	8.08	2.92	67.76	1.33	0.04	0.41
0.287	12.68	1.78	8.27	3	67.7	1.33	0.07	0.41
0.288	12.85	1.77	8.51	3.07	67.65	1.33	0.1	0.43
0.289	13.03	1.79	8.8	3.08	67.59	1.34	0.12	0.45
0.29	13.22	1.81	9.13	3	67.55	1.34	0.13	0.47
0.291	13.39	1.8	9.49	2.83	67.5	1.35	0.13	0.46
0.292	13.56	1.74	9.88	2.6	67.45	1.35	0.13	0.43
0.293	13.74	1.61	10.29	2.35	67.41	1.35	0.13	0.41
0.294	13.93	1.45	10.7	2.12	67.36	1.35	0.12	0.4
0.295	14.15	1.29	11.12	1.94	67.32	1.35	0.12	0.41
0.296	14.37	1.2	11.53	1.82	67.28	1.35	0.11	0.41
0.297	14.6	1.16	11.93	1.74	67.24	1.36	0.11	0.41
0.298	14.81	1.14	12.32	1.71	67.2	1.36	0.12	0.41
0.299	15.01	1.12	12.69	1.67	67.17	1.37	0.12	0.42
0.3	15.2	1.11	13.05	1.65	67.13	1.37	0.13	0.43
0.301	15.37	1.11	13.4	1.62	67.1	1.38	0.13	0.45
0.302	15.54	1.1	13.74	1.58	67.07	1.39	0.13	0.47
0.303	15.71	1.08	14.05	1.52	67.04	1.39	0.14	0.49
0.304	15.88	1.05	14.34	1.45	67.02	1.39	0.14	0.54
0.305	16.03	1.03	14.61	1.37	66.99	1.4	0.15	0.59
0.306	16.17	1	14.85	1.29	66.97	1.39	0.16	0.65
0.307	16.29	1	15.05	1.24	66.94	1.39	0.17	0.68
0.308	16.38	1.01	15.23	1.2	66.92	1.39	0.17	0.69
0.309	16.46	1.02	15.38	1.18	66.9	1.38	0.17	0.67
0.31	16.53	1.05	15.5	1.16	66.88	1.38	0.17	0.65
0.311	16.59	1.05	15.59	1.15	66.86	1.37	0.18	0.63
0.312	16.65	1.05	15.67	1.14	66.84	1.37	0.19	0.62
0.313	16.69	1.04	15.72	1.13	66.82	1.36	0.21	0.6

0.314	16.72	1.03	15.76	1.11	66.79	1.36	0.23	0.58
0.315	16.73	1.03	15.77	1.09	66.78	1.35	0.24	0.56
0.316	16.73	1.04	15.77	1.06	66.75	1.35	0.26	0.54
0.317	16.73	1.06	15.76	1.04	66.73	1.34	0.27	0.55
0.318	16.72	1.07	15.73	1.03	66.71	1.33	0.28	0.56
0.319	16.72	1.07	15.71	1.02	66.69	1.33	0.28	0.59
0.32	16.71	1.06	15.67	1.01	66.66	1.32	0.28	0.6
0.321	16.7	1.05	15.64	1.01	66.64	1.31	0.28	0.6
0.322	16.68	1.04	15.59	0.99	66.61	1.3	0.27	0.59
0.323	16.65	1.04	15.54	0.96	66.58	1.29	0.26	0.57
0.324	16.63	1.03	15.49	0.93	66.55	1.28	0.26	0.55
0.325	16.6	1.03	15.43	0.9	66.52	1.27	0.25	0.52
0.326	16.57	1.03	15.38	0.88	66.48	1.26	0.24	0.5
0.327	16.55	1.03	15.32	0.86	66.45	1.26	0.25	0.49
0.328	16.54	1.03	15.28	0.86	66.41	1.25	0.26	0.5
0.329	16.53	1.02	15.24	0.86	66.38	1.24	0.29	0.53
0.33	16.53	1.02	15.22	0.86	66.35	1.23	0.31	0.58
0.331	16.53	1.01	15.22	0.85	66.31	1.23	0.32	0.61
0.332	16.53	1.01	15.22	0.84	66.28	1.22	0.32	0.62
0.333	16.54	1.01	15.24	0.82	66.24	1.21	0.31	0.61
0.334	16.55	1	15.26	0.8	66.21	1.2	0.3	0.56
0.335	16.57	0.99	15.28	0.77	66.18	1.2	0.3	0.52
0.336	16.59	0.98	15.31	0.75	66.15	1.19	0.31	0.49
0.337	16.61	0.97	15.34	0.73	66.12	1.18	0.31	0.49
0.338	16.64	0.95	15.38	0.7	66.09	1.17	0.31	0.5
0.339	16.68	0.94	15.43	0.68	66.06	1.17	0.31	0.51
0.34	16.71	0.93	15.48	0.66	66.04	1.16	0.3	0.5
0.341	16.76	0.92	15.55	0.64	66.01	1.16	0.29	0.49
0.342	16.8	0.91	15.62	0.62	65.98	1.15	0.28	0.51
0.343	16.85	0.9	15.7	0.59	65.95	1.15	0.28	0.54
0.344	16.9	0.88	15.79	0.55	65.93	1.14	0.28	0.58
0.345	16.95	0.86	15.87	0.51	65.9	1.14	0.29	0.62
0.346	17.01	0.83	15.96	0.46	65.87	1.14	0.3	0.64
0.347	17.07	0.81	16.06	0.41	65.83	1.13	0.3	0.63
0.348	17.12	0.78	16.15	0.36	65.8	1.13	0.31	0.6
0.349	17.18	0.75	16.25	0.31	65.77	1.13	0.31	0.57
0.35	17.24	0.73	16.34	0.26	65.73	1.12	0.3	0.55
0.351	17.3	0.7	16.44	0.23	65.69	1.12	0.29	0.52
0.352	17.36	0.68	16.54	0.21	65.65	1.11	0.29	0.5
0.353	17.42	0.65	16.64	0.2	65.61	1.11	0.29	0.48
0.354	17.48	0.63	16.74	0.22	65.57	1.1	0.29	0.47

0.355	17.54	0.61	16.83	0.25	65.53	1.09	0.31	0.47
0.356	17.59	0.6	16.91	0.28	65.48	1.09	0.32	0.47
0.357	17.64	0.59	17	0.31	65.44	1.08	0.32	0.47
0.358	17.69	0.59	17.08	0.35	65.39	1.08	0.32	0.46
0.359	17.73	0.59	17.15	0.38	65.35	1.07	0.31	0.44
0.36	17.78	0.6	17.23	0.42	65.3	1.06	0.3	0.41
0.361	17.82	0.62	17.3	0.46	65.26	1.06	0.29	0.37
0.362	17.86	0.64	17.38	0.5	65.22	1.05	0.28	0.34
0.363	17.9	0.67	17.45	0.54	65.17	1.04	0.27	0.33
0.364	17.94	0.71	17.52	0.58	65.13	1.03	0.26	0.34
0.365	17.97	0.75	17.58	0.62	65.08	1.03	0.26	0.37
0.366	17.99	0.79	17.63	0.66	65.03	1.03	0.27	0.4
0.367	18.02	0.83	17.67	0.72	64.99	1.02	0.29	0.43
0.368	18.03	0.87	17.71	0.77	64.94	1.02	0.3	0.45
0.369	18.05	0.91	17.74	0.82	64.89	1.01	0.31	0.48
0.37	18.06	0.95	17.76	0.87	64.84	1.01	0.31	0.5
0.371	18.07	0.99	17.78	0.93	64.78	1.01	0.3	0.5
0.372	18.08	1.03	17.8	0.98	64.73	1.01	0.3	0.46
0.373	18.09	1.06	17.82	1.03	64.68	1.01	0.31	0.41
0.374	18.09	1.09	17.83	1.08	64.62	1.01	0.31	0.36
0.375	18.09	1.13	17.85	1.13	64.57	1.01	0.31	0.32
0.376	18.09	1.16	17.86	1.19	64.51	1.02	0.3	0.32
0.377	18.08	1.19	17.86	1.24	64.46	1.02	0.3	0.35
0.378	18.07	1.22	17.85	1.3	64.4	1.02	0.31	0.41
0.379	18.05	1.25	17.84	1.34	64.34	1.03	0.32	0.45
0.38	18.03	1.27	17.81	1.38	64.29	1.03	0.33	0.49
0.381	18.01	1.29	17.78	1.42	64.23	1.03	0.34	0.53
0.382	17.99	1.31	17.75	1.45	64.18	1.03	0.34	0.56
0.383	17.97	1.32	17.72	1.46	64.12	1.04	0.34	0.58
0.384	17.96	1.33	17.7	1.47	64.07	1.04	0.33	0.58
0.385	17.95	1.33	17.67	1.46	64.01	1.05	0.33	0.57
0.386	17.94	1.33	17.64	1.45	63.96	1.05	0.33	0.53
0.387	17.93	1.32	17.62	1.42	63.91	1.06	0.34	0.5
0.388	17.92	1.32	17.59	1.4	63.86	1.06	0.34	0.48
0.389	17.91	1.32	17.55	1.36	63.81	1.07	0.34	0.48
0.39	17.9	1.31	17.51	1.33	63.76	1.07	0.33	0.51
0.391	17.88	1.31	17.47	1.29	63.71	1.07	0.33	0.55
0.392	17.87	1.31	17.42	1.26	63.67	1.08	0.33	0.58
0.393	17.86	1.3	17.39	1.23	63.62	1.08	0.32	0.61
0.394	17.86	1.28	17.36	1.19	63.57	1.09	0.32	0.62
0.395	17.85	1.26	17.35	1.15	63.53	1.09	0.32	0.62

0.396	17.85	1.24	17.34	1.11	63.48	1.09	0.31	0.61
0.397	17.85	1.21	17.35	1.07	63.44	1.09	0.3	0.59
0.398	17.86	1.18	17.37	1.01	63.4	1.09	0.3	0.56
0.399	17.86	1.15	17.39	0.96	63.36	1.09	0.3	0.54
0.4	17.88	1.13	17.42	0.91	63.31	1.08	0.29	0.52
0.401	17.89	1.1	17.45	0.85	63.27	1.08	0.29	0.52
0.402	17.9	1.07	17.48	0.8	63.23	1.08	0.29	0.53
0.403	17.92	1.04	17.5	0.74	63.18	1.07	0.29	0.54
0.404	17.93	1	17.53	0.69	63.14	1.07	0.29	0.55
0.405	17.94	0.97	17.55	0.64	63.1	1.07	0.29	0.55
0.406	17.96	0.94	17.58	0.59	63.05	1.07	0.29	0.53
0.407	17.97	0.91	17.61	0.55	63	1.06	0.29	0.52
0.408	17.99	0.88	17.64	0.52	62.95	1.07	0.28	0.5
0.409	18.01	0.85	17.68	0.5	62.9	1.06	0.27	0.49
0.41	18.03	0.83	17.72	0.48	62.86	1.06	0.27	0.46
0.411	18.05	0.8	17.77	0.46	62.81	1.07	0.27	0.43
0.412	18.07	0.78	17.82	0.45	62.75	1.07	0.26	0.4
0.413	18.08	0.76	17.86	0.43	62.71	1.07	0.26	0.38
0.414	18.1	0.75	17.9	0.41	62.66	1.08	0.24	0.37
0.415	18.11	0.74	17.94	0.39	62.61	1.08	0.24	0.38
0.416	18.13	0.74	17.98	0.37	62.55	1.09	0.24	0.4
0.417	18.14	0.74	18.01	0.37	62.51	1.09	0.25	0.42
0.418	18.16	0.75	18.05	0.39	62.46	1.1	0.27	0.43
0.419	18.18	0.76	18.08	0.42	62.41	1.1	0.27	0.43
0.42	18.2	0.79	18.12	0.46	62.37	1.1	0.27	0.43
0.421	18.22	0.82	18.17	0.49	62.32	1.11	0.26	0.42
0.422	18.24	0.84	18.21	0.53	62.28	1.11	0.25	0.41
0.423	18.26	0.87	18.26	0.56	62.24	1.11	0.25	0.4
0.424	18.28	0.91	18.3	0.61	62.19	1.11	0.25	0.39
0.425	18.3	0.94	18.34	0.66	62.15	1.12	0.25	0.37
0.426	18.32	0.98	18.37	0.71	62.11	1.12	0.26	0.35
0.427	18.33	1.02	18.4	0.77	62.07	1.11	0.26	0.34
0.428	18.34	1.06	18.41	0.83	62.03	1.12	0.27	0.35
0.429	18.34	1.1	18.42	0.89	61.99	1.12	0.29	0.35
0.43	18.35	1.14	18.43	0.95	61.95	1.12	0.3	0.35
0.431	18.35	1.17	18.44	1.01	61.9	1.12	0.3	0.33
0.432	18.35	1.2	18.44	1.05	61.86	1.12	0.3	0.31
0.433	18.34	1.23	18.44	1.09	61.82	1.12	0.29	0.3
0.434	18.33	1.25	18.44	1.13	61.78	1.11	0.27	0.3
0.435	18.33	1.27	18.43	1.15	61.74	1.12	0.26	0.31
0.436	18.32	1.28	18.43	1.17	61.7	1.12	0.26	0.3

0.437	18.31	1.28	18.42	1.18	61.66	1.13	0.26	0.29
0.438	18.29	1.27	18.4	1.17	61.62	1.12	0.26	0.28
0.439	18.28	1.26	18.39	1.16	61.58	1.12	0.26	0.27
0.44	18.27	1.24	18.37	1.13	61.54	1.13	0.26	0.29
0.441	18.25	1.23	18.35	1.11	61.5	1.13	0.26	0.32
0.442	18.24	1.2	18.34	1.07	61.47	1.13	0.26	0.35
0.443	18.22	1.17	18.32	1.04	61.43	1.12	0.26	0.37
0.444	18.21	1.14	18.31	1	61.4	1.12	0.25	0.38
0.445	18.21	1.12	18.31	0.96	61.37	1.12	0.25	0.4
0.446	18.21	1.09	18.31	0.93	61.33	1.12	0.23	0.42
0.447	18.21	1.06	18.32	0.89	61.3	1.12	0.23	0.43
0.448	18.22	1.04	18.34	0.86	61.27	1.11	0.22	0.43
0.449	18.23	1.01	18.37	0.82	61.24	1.11	0.22	0.42
0.45	18.23	0.99	18.39	0.79	61.22	1.1	0.23	0.41
0.451	18.24	0.97	18.42	0.76	61.18	1.1	0.23	0.4
0.452	18.25	0.95	18.44	0.73	61.16	1.1	0.23	0.41
0.453	18.27	0.93	18.45	0.7	61.13	1.09	0.23	0.44
0.454	18.29	0.91	18.48	0.67	61.09	1.09	0.24	0.46
0.455	18.31	0.89	18.5	0.64	61.06	1.09	0.25	0.48
0.456	18.34	0.88	18.53	0.61	61.03	1.08	0.26	0.48
0.457	18.37	0.87	18.58	0.59	61	1.08	0.25	0.48
0.458	18.41	0.86	18.63	0.57	60.97	1.08	0.23	0.49
0.459	18.45	0.85	18.69	0.55	60.93	1.07	0.22	0.51
0.46	18.49	0.85	18.76	0.54	60.9	1.07	0.21	0.53
0.461	18.54	0.85	18.83	0.52	60.87	1.07	0.2	0.54
0.462	18.58	0.84	18.89	0.51	60.84	1.07	0.2	0.53
0.463	18.62	0.84	18.96	0.49	60.81	1.07	0.2	0.52
0.464	18.66	0.85	19.02	0.49	60.77	1.06	0.19	0.52
0.465	18.7	0.84	19.08	0.48	60.74	1.06	0.18	0.53
0.466	18.75	0.85	19.14	0.49	60.71	1.05	0.18	0.56
0.467	18.79	0.85	19.2	0.51	60.68	1.05	0.18	0.57
0.468	18.83	0.86	19.27	0.53	60.65	1.04	0.19	0.58
0.469	18.86	0.86	19.33	0.57	60.62	1.04	0.19	0.57
0.47	18.9	0.87	19.4	0.59	60.59	1.03	0.19	0.58
0.471	18.94	0.87	19.46	0.62	60.56	1.03	0.18	0.59
0.472	18.97	0.88	19.53	0.64	60.53	1.03	0.17	0.62
0.473	19	0.88	19.58	0.65	60.5	1.02	0.17	0.65
0.474	19.04	0.89	19.64	0.67	60.47	1.01	0.17	0.67
0.475	19.07	0.89	19.7	0.68	60.44	1	0.17	0.68
0.476	19.11	0.9	19.76	0.69	60.41	1	0.18	0.69
0.477	19.15	0.91	19.82	0.71	60.38	0.99	0.18	0.69

0.478	19.2	0.92	19.9	0.72	60.34	0.98	0.19	0.69
0.479	19.26	0.92	19.99	0.74	60.31	0.98	0.19	0.68
0.48	19.31	0.93	20.09	0.76	60.28	0.98	0.19	0.65
0.481	19.37	0.94	20.19	0.78	60.25	0.97	0.19	0.63
0.482	19.42	0.94	20.28	0.79	60.21	0.97	0.19	0.62
0.483	19.46	0.95	20.37	0.79	60.17	0.96	0.18	0.63
0.484	19.5	0.95	20.44	0.8	60.14	0.96	0.17	0.65
0.485	19.54	0.95	20.51	0.79	60.1	0.96	0.16	0.67
0.486	19.59	0.95	20.58	0.79	60.06	0.96	0.15	0.66
0.487	19.65	0.95	20.67	0.79	60.03	0.96	0.15	0.65
0.488	19.73	0.96	20.78	0.8	59.99	0.96	0.14	0.63
0.489	19.81	0.97	20.91	0.8	59.95	0.96	0.13	0.61
0.49	19.9	0.99	21.07	0.82	59.92	0.95	0.12	0.61
0.491	20	1	21.24	0.83	59.88	0.95	0.12	0.6
0.492	20.1	1.01	21.43	0.84	59.85	0.95	0.13	0.59
0.493	20.19	1.02	21.6	0.84	59.81	0.94	0.14	0.58
0.494	20.29	1.03	21.77	0.85	59.78	0.94	0.15	0.57
0.495	20.38	1.04	21.93	0.85	59.75	0.93	0.14	0.57
0.496	20.48	1.05	22.07	0.85	59.72	0.93	0.13	0.58
0.497	20.57	1.06	22.22	0.86	59.69	0.92	0.12	0.59
0.498	20.67	1.07	22.36	0.87	59.65	0.92	0.12	0.6
0.499	20.77	1.08	22.51	0.88	59.62	0.91	0.12	0.61
0.5	20.87	1.08	22.68	0.9	59.58	0.9	0.12	0.61
0.501	20.97	1.09	22.84	0.91	59.55	0.9	0.12	0.61
0.502	21.06	1.1	23.02	0.92	59.51	0.89	0.12	0.61
0.503	21.15	1.1	23.19	0.93	59.47	0.89	0.12	0.62
0.504	21.24	1.1	23.35	0.94	59.42	0.89	0.12	0.62
0.505	21.32	1.1	23.49	0.94	59.38	0.89	0.12	0.62
0.506	21.39	1.09	23.62	0.93	59.33	0.89	0.12	0.61
0.507	21.45	1.08	23.73	0.91	59.28	0.89	0.12	0.62
0.508	21.5	1.07	23.82	0.89	59.23	0.89	0.11	0.64
0.509	21.54	1.06	23.89	0.87	59.18	0.89	0.09	0.67
0.51	21.57	1.04	23.95	0.84	59.13	0.9	0.08	0.7
0.511	21.59	1.03	24.01	0.81	59.08	0.9	0.08	0.73
0.512	21.61	1.01	24.06	0.79	59.03	0.9	0.07	0.75
0.513	21.62	1	24.09	0.77	58.98	0.9	0.07	0.75
0.514	21.62	0.99	24.12	0.75	58.93	0.9	0.07	0.74
0.515	21.61	0.98	24.15	0.74	58.88	0.9	0.06	0.74
0.516	21.6	0.98	24.16	0.73	58.83	0.91	0.06	0.74
0.517	21.59	0.97	24.17	0.73	58.78	0.91	0.07	0.74
0.518	21.56	0.96	24.17	0.73	58.74	0.91	0.08	0.73

0.519	21.54	0.96	24.16	0.72	58.7	0.9	0.09	0.74
0.52	21.51	0.95	24.15	0.71	58.65	0.9	0.09	0.75
0.521	21.48	0.94	24.14	0.71	58.61	0.9	0.09	0.77
0.522	21.46	0.94	24.14	0.7	58.57	0.9	0.09	0.8
0.523	21.44	0.94	24.15	0.7	58.53	0.9	0.09	0.82
0.524	21.42	0.94	24.16	0.7	58.49	0.9	0.09	0.82
0.525	21.41	0.94	24.2	0.71	58.45	0.9	0.1	0.83
0.526	21.4	0.95	24.24	0.71	58.41	0.9	0.11	0.83
0.527	21.4	0.96	24.31	0.72	58.37	0.9	0.11	0.83
0.528	21.4	0.96	24.38	0.73	58.33	0.9	0.11	0.84
0.529	21.4	0.97	24.47	0.73	58.29	0.9	0.11	0.83
0.53	21.4	0.98	24.57	0.73	58.25	0.9	0.11	0.83
0.531	21.4	0.99	24.69	0.73	58.21	0.9	0.1	0.82
0.532	21.39	1	24.81	0.72	58.17	0.91	0.1	0.83
0.533	21.36	1	24.95	0.72	58.12	0.91	0.09	0.85
0.534	21.29	1.01	25.1	0.72	58.08	0.91	0.08	0.88
0.535	21.14	1.02	25.27	0.72	58.04	0.92	0.08	0.91
0.536	20.85	1.1	25.46	0.74	58	0.92	0.1	0.94
0.537	20.35	1.29	25.71	0.79	57.96	0.93	0.11	0.95
0.538	19.55	1.61	26.04	0.86	57.92	0.93	0.12	0.96
0.539	18.35	2.01	26.49	0.97	57.89	0.93	0.13	0.97
0.54	16.58	2.43	27.13	1.14	57.85	0.93	0.14	0.97
0.541	14.09	2.68	28.06	1.34	57.82	0.93	0.15	0.97
0.542	10.9	2.86	29.36	1.56	57.78	0.93	0.16	0.97
0.543	7.19	3.48	31.14	1.75	57.76	0.93	0.18	0.95
0.544	3.3	4.75	33.42	1.92	57.74	0.93	0.19	0.94
0.545	-0.28	6.43	36.15	2.14	57.73	0.94	0.21	0.93
0.546	-3.04	8.65	39.19	2.5	57.73	0.95	0.22	0.94
0.547	-4.61	11.57	42.32	3.12	57.76	0.97	0.24	1