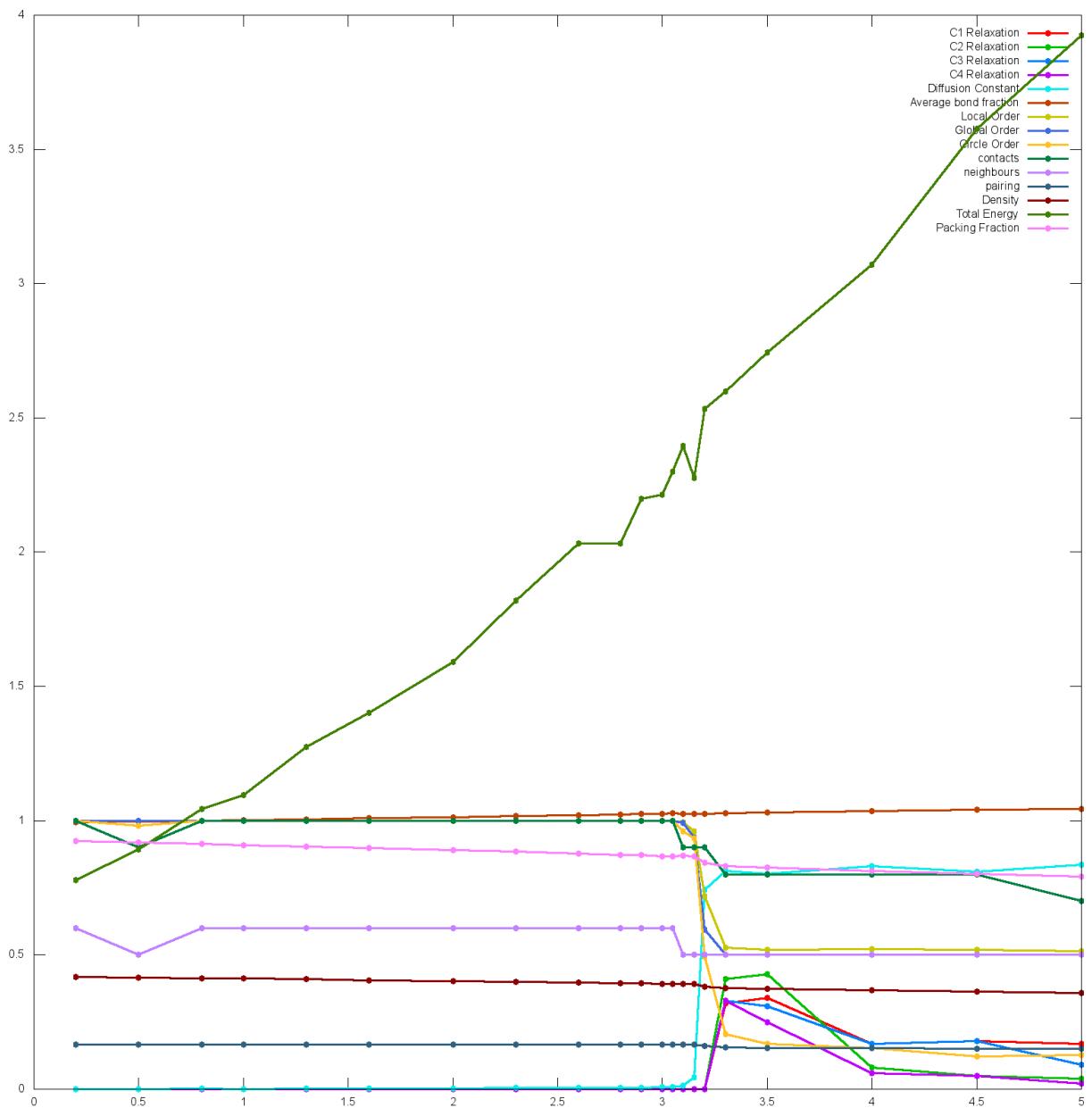
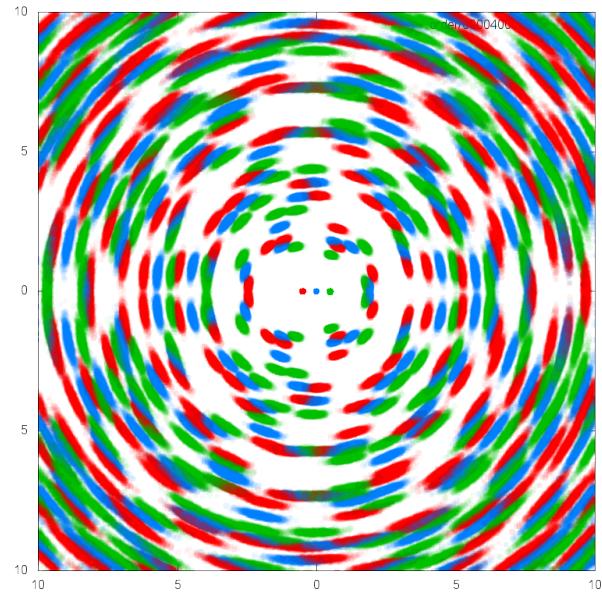


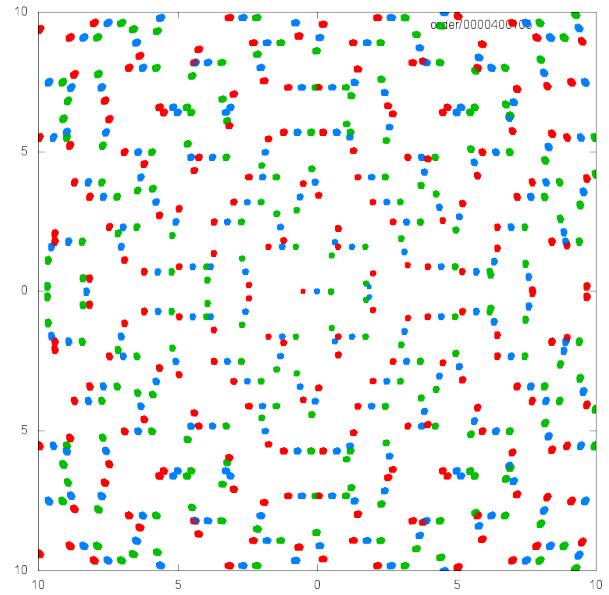
Figure 1: Temperature Dependence



# 1 Order Parameter

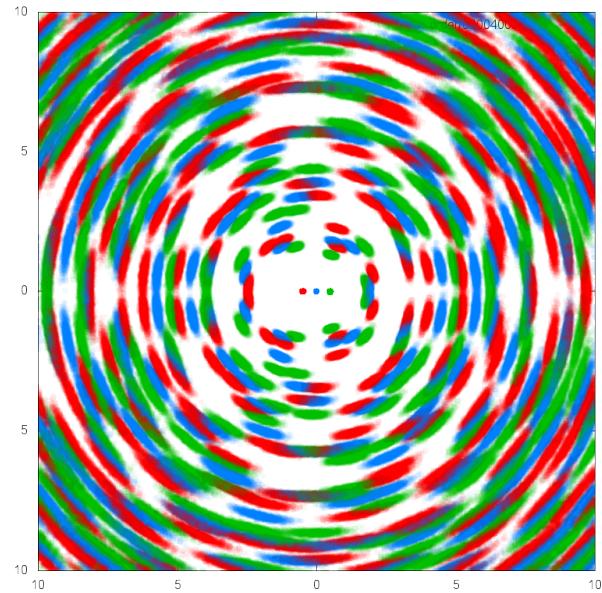


(3.1) Pre minimisation

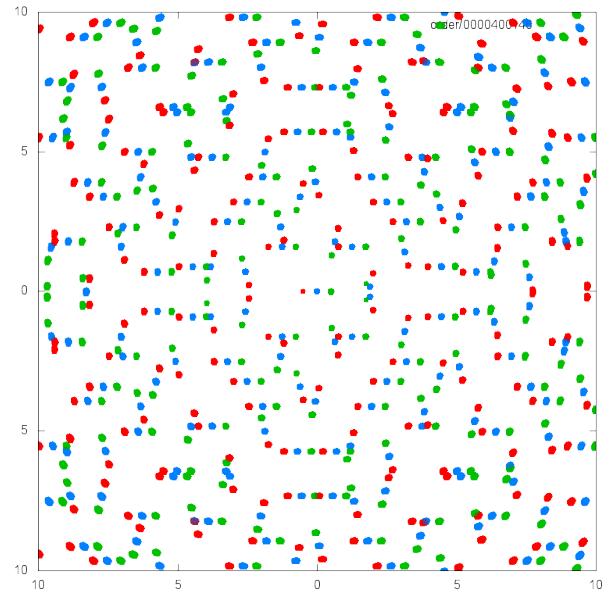


(3.2) Post CG minimisation

Figure 3: Snowman: Temp= 0.2,  $r = 0.637556$ ,  $d = 1.0$ , pg

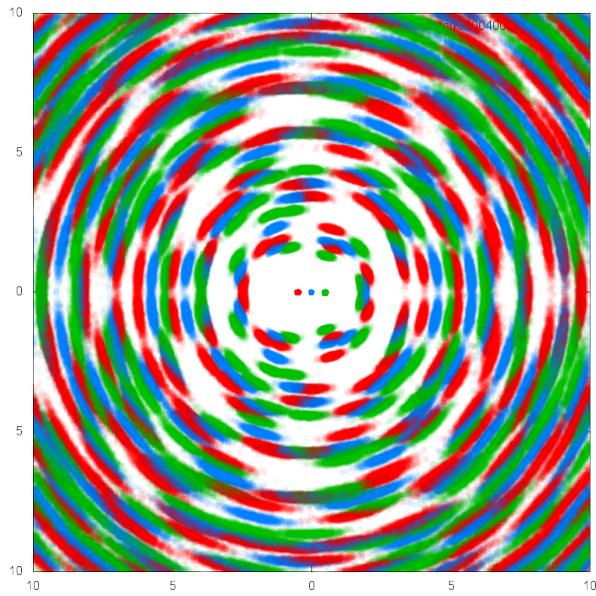


(4.1) Pre minimisation

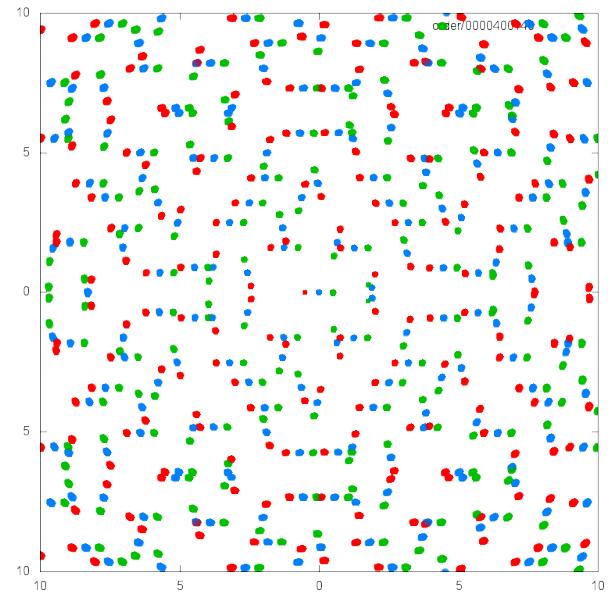


(4.2) Post CG minimisation

Figure 4: Snowman: Temp= 0.3,  $r = 0.637556$ ,  $d = 1.0$ , pg

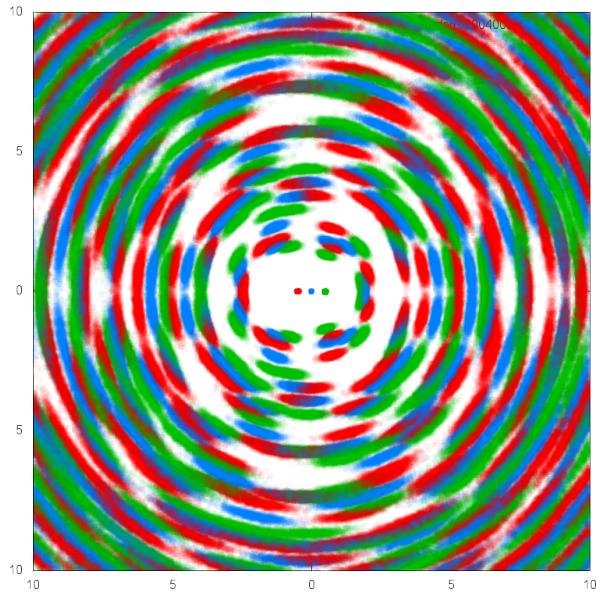


(5.1) Pre minimisation

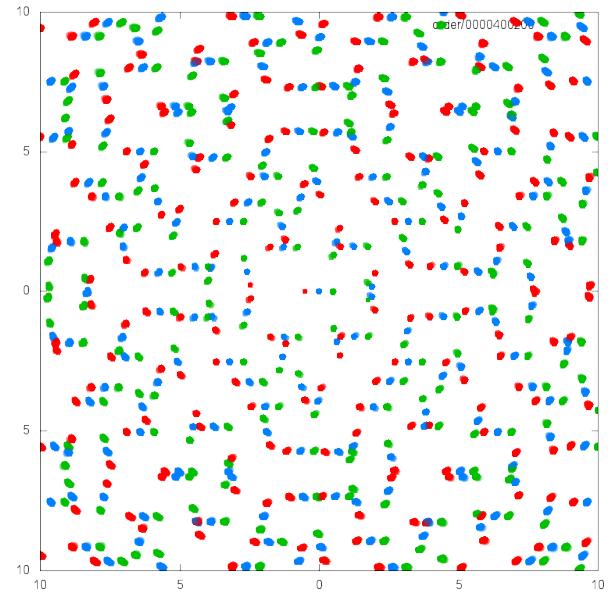


(5.2) Post CG minimisation

Figure 5: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg

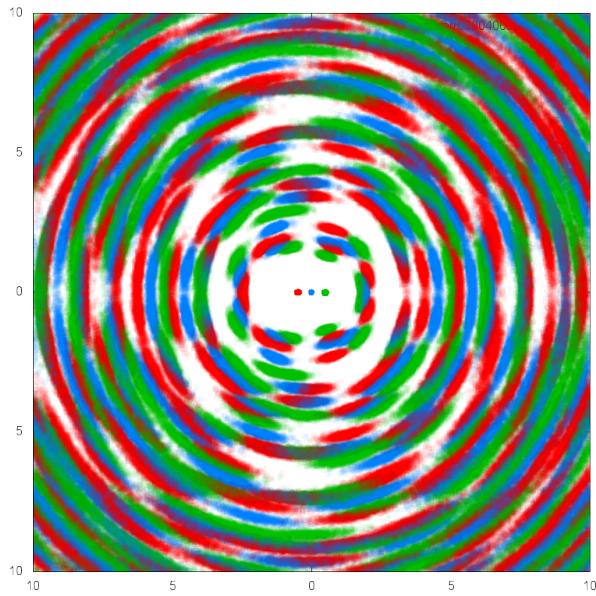


(6.1) Pre minimisation

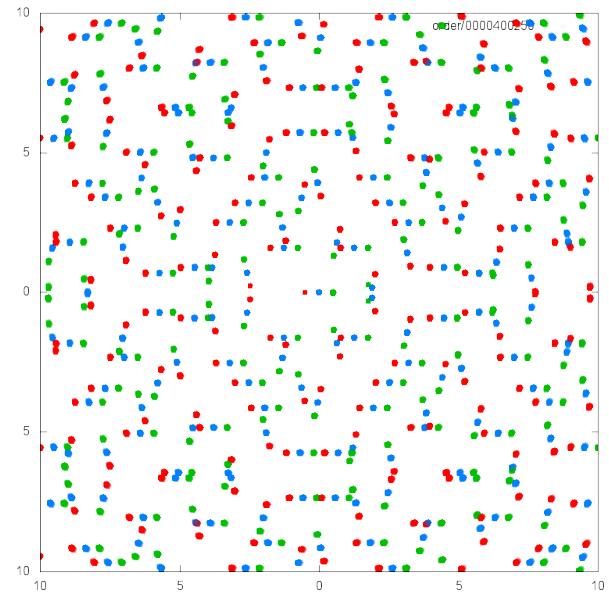


(6.2) Post CG minimisation

Figure 6: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

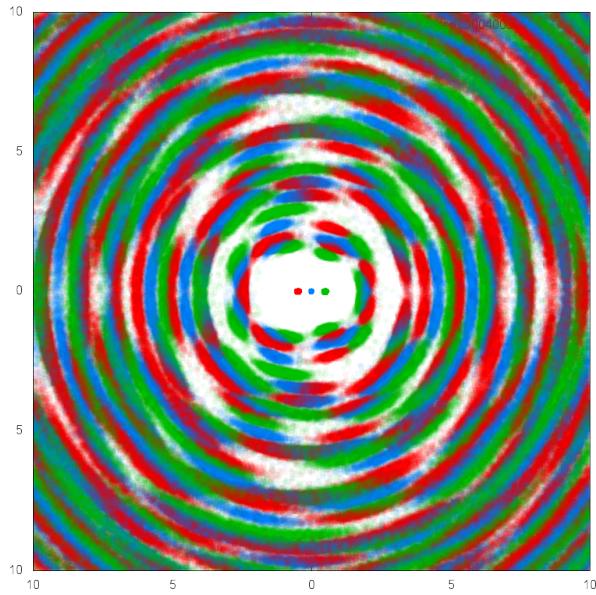


(7.1) Pre minimisation

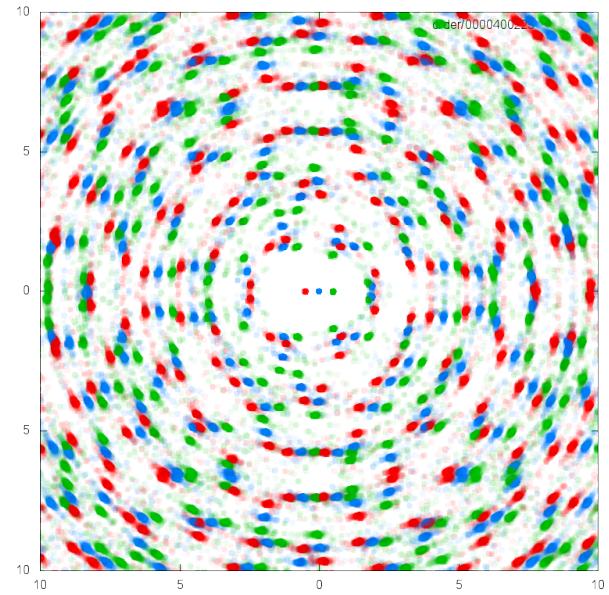


(7.2) Post CG minimisation

Figure 7: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg



(8.1) Pre minimisation



(8.2) Post CG minimisation

Figure 8: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

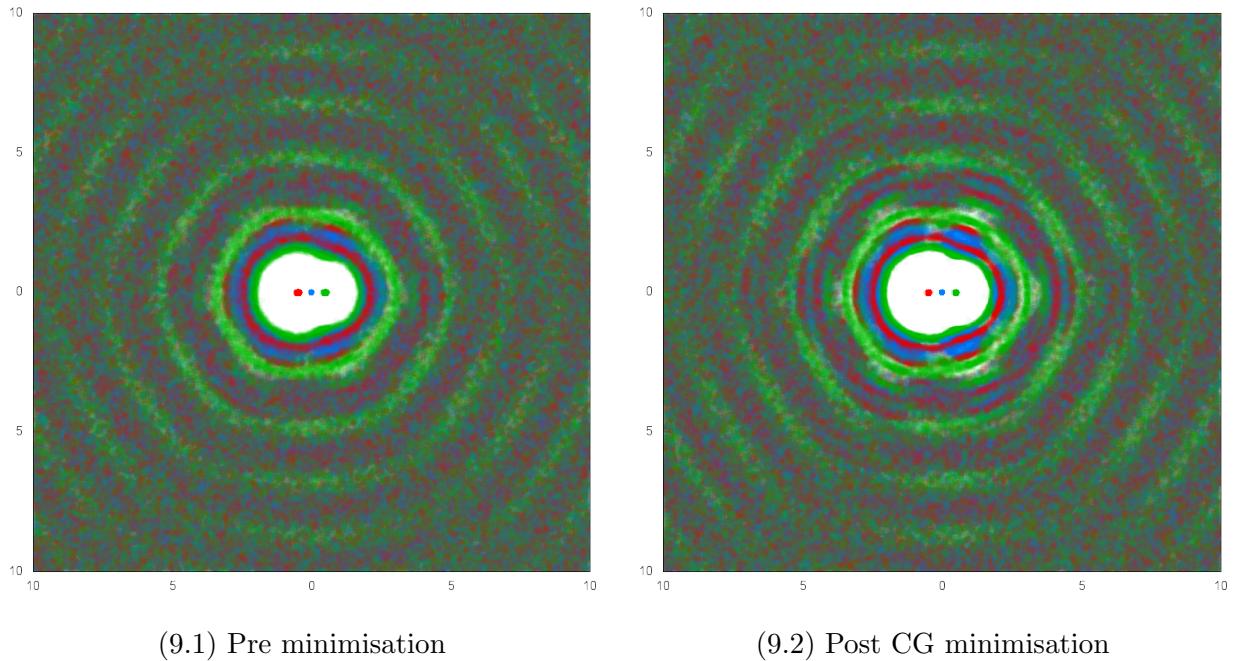


Figure 9: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

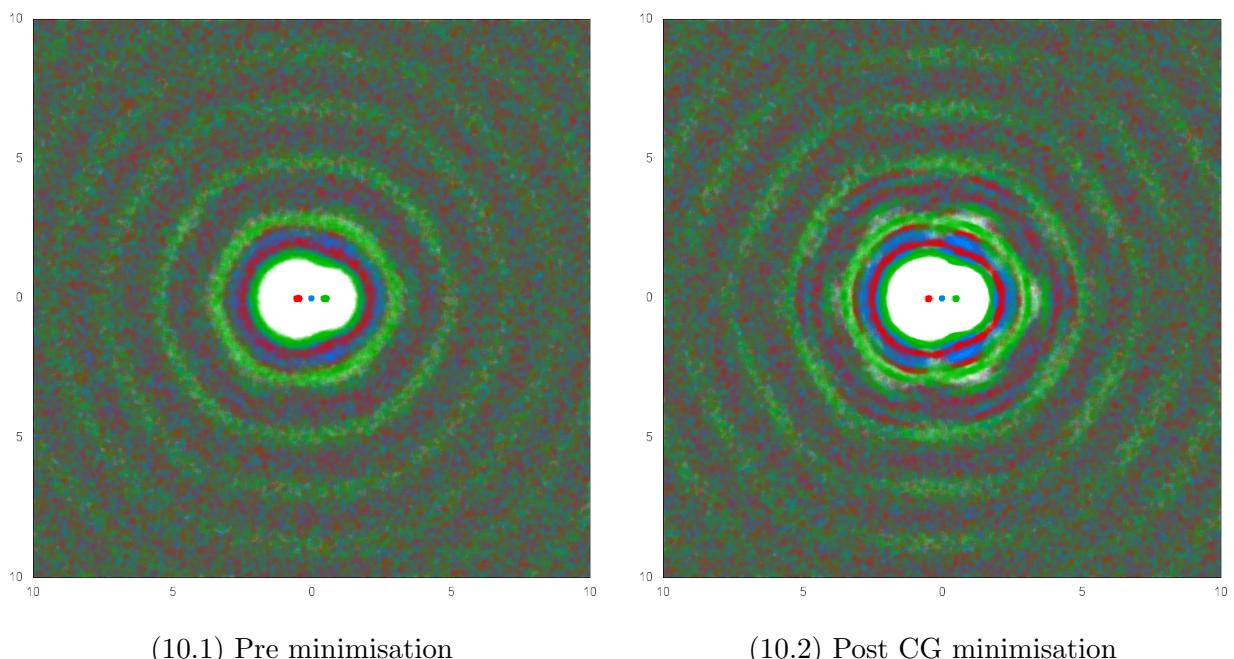
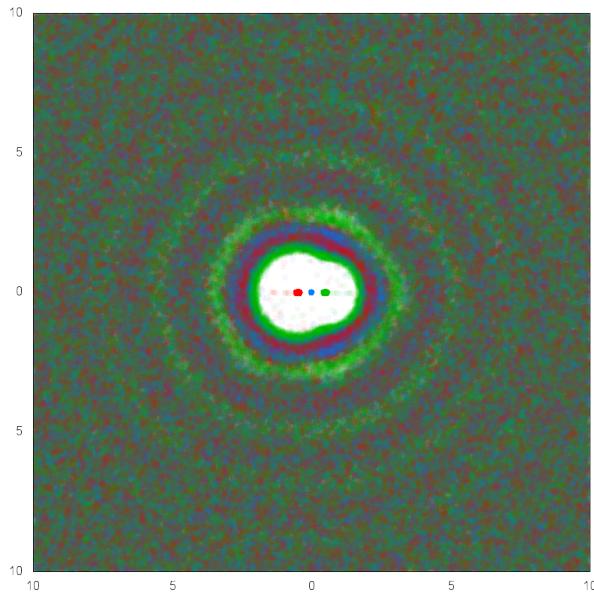
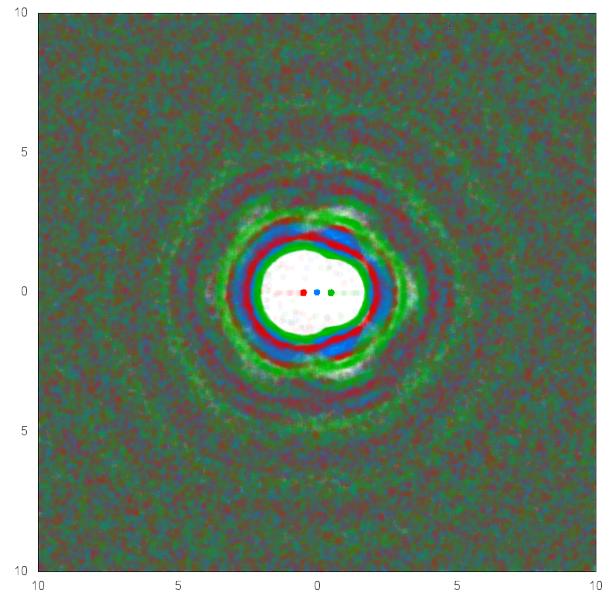


Figure 10: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

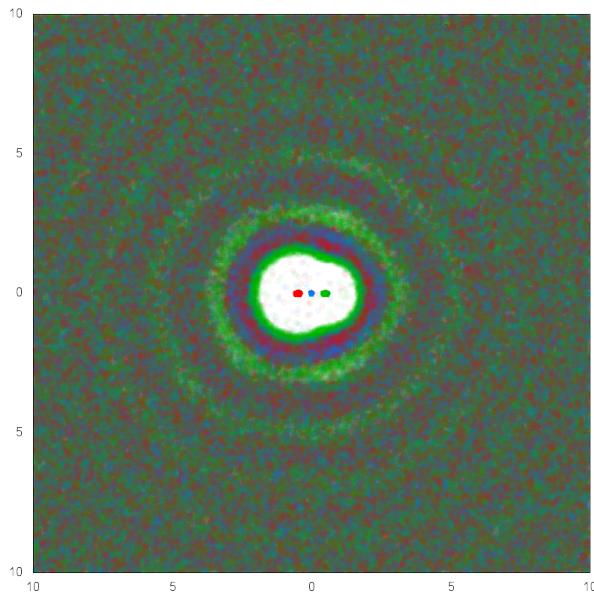


(11.1) Pre minimisation

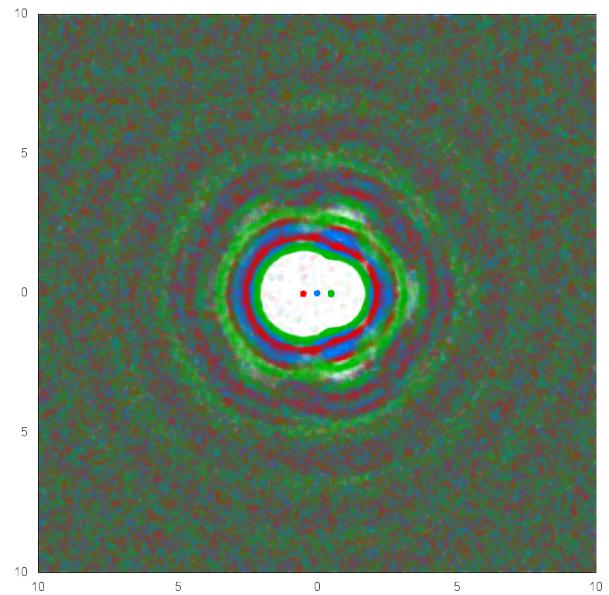


(11.2) Post CG minimisation

Figure 11: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

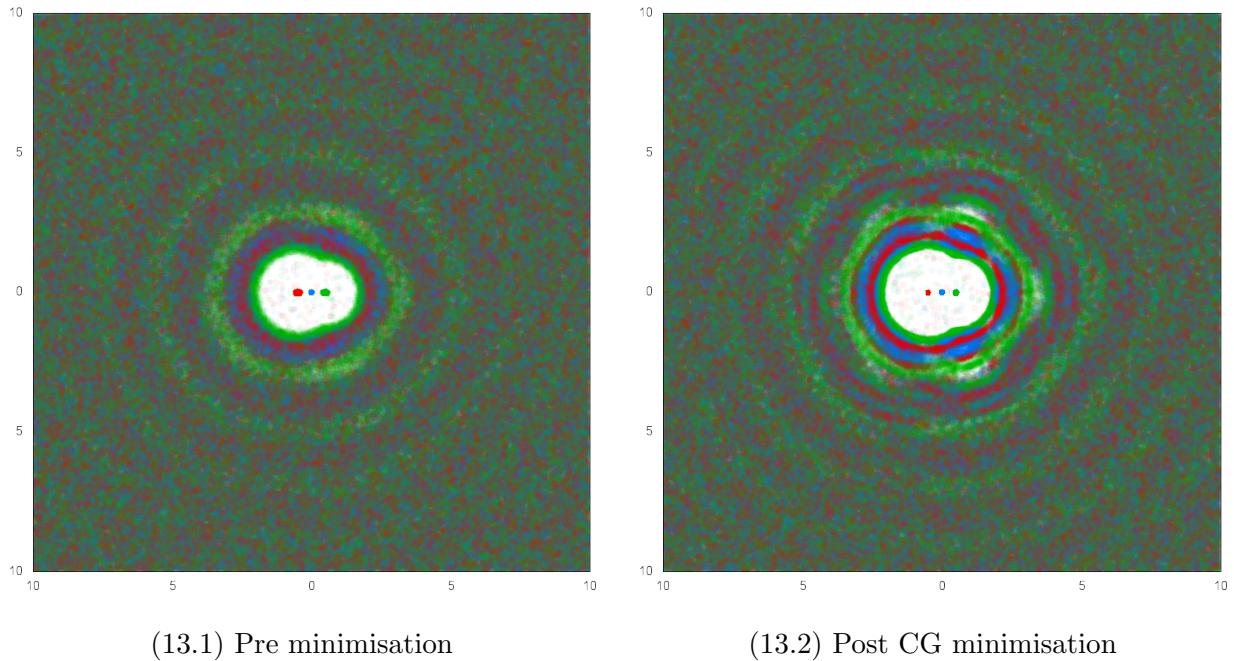


(12.1) Pre minimisation



(12.2) Post CG minimisation

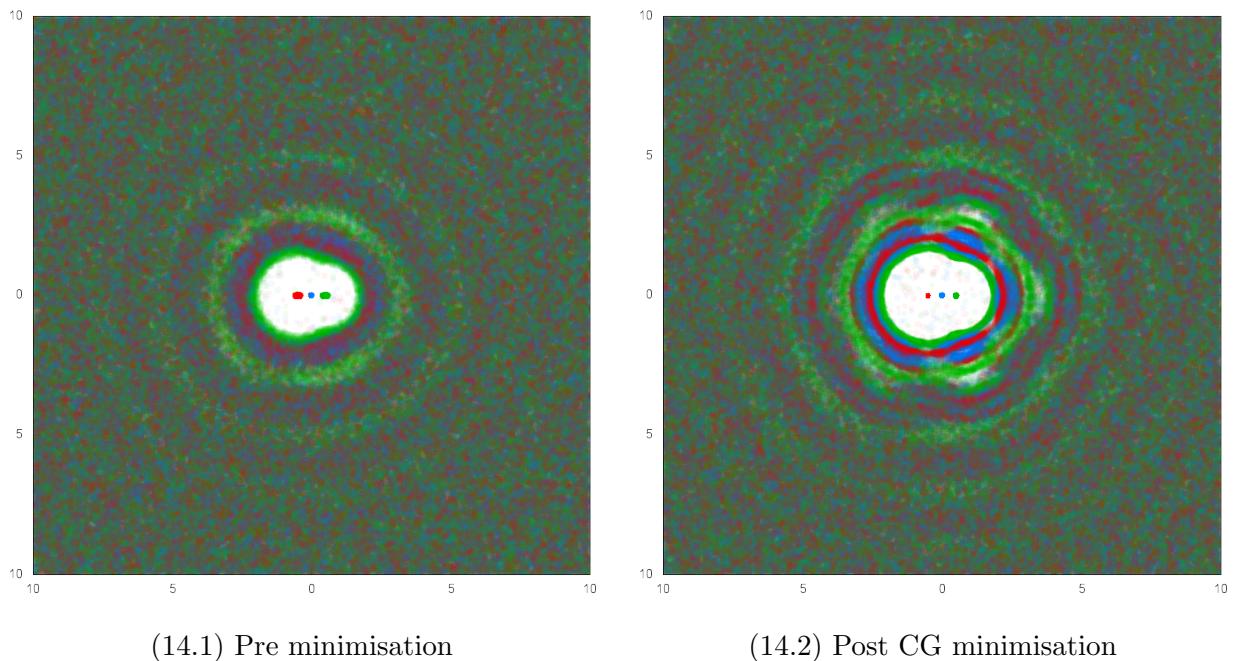
Figure 12: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg



(13.1) Pre minimisation

(13.2) Post CG minimisation

Figure 13: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg



(14.1) Pre minimisation

(14.2) Post CG minimisation

Figure 14: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

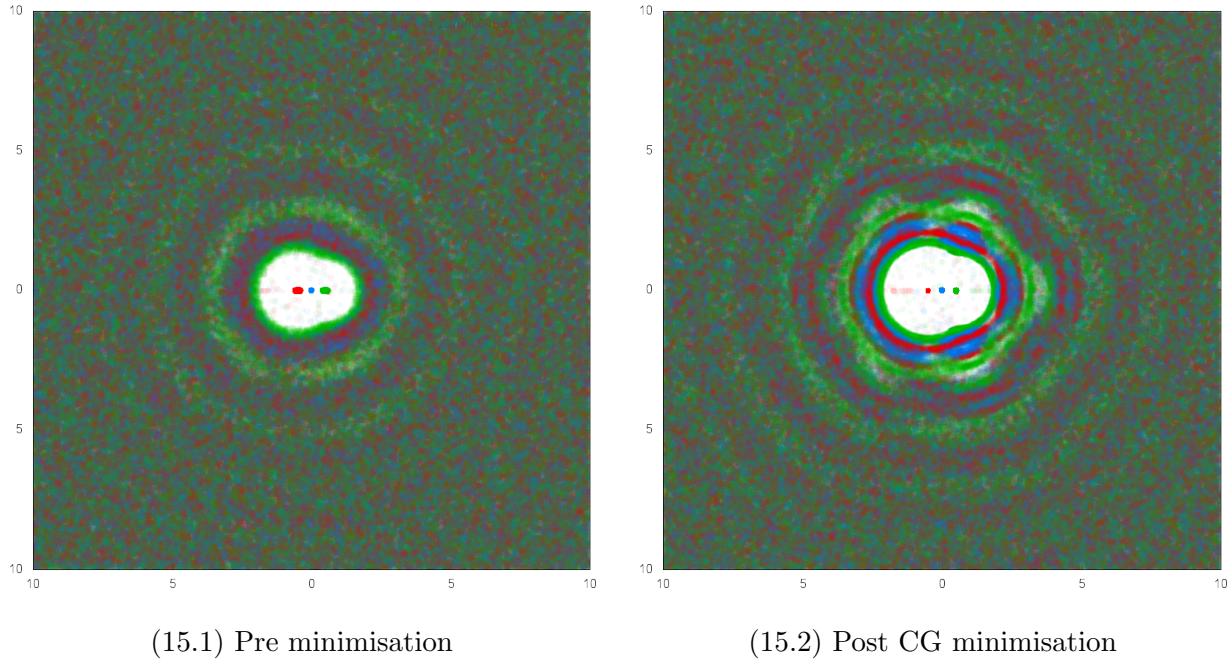


Figure 15: Snowman: Temp= 5.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

## 2 Configuration

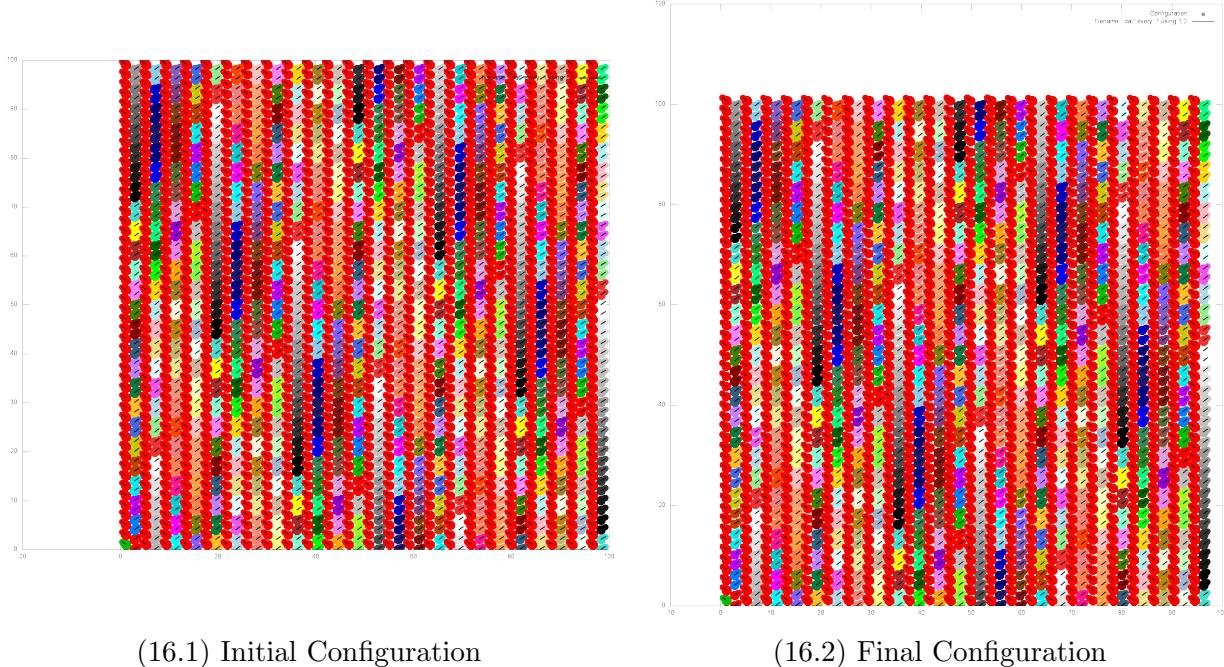
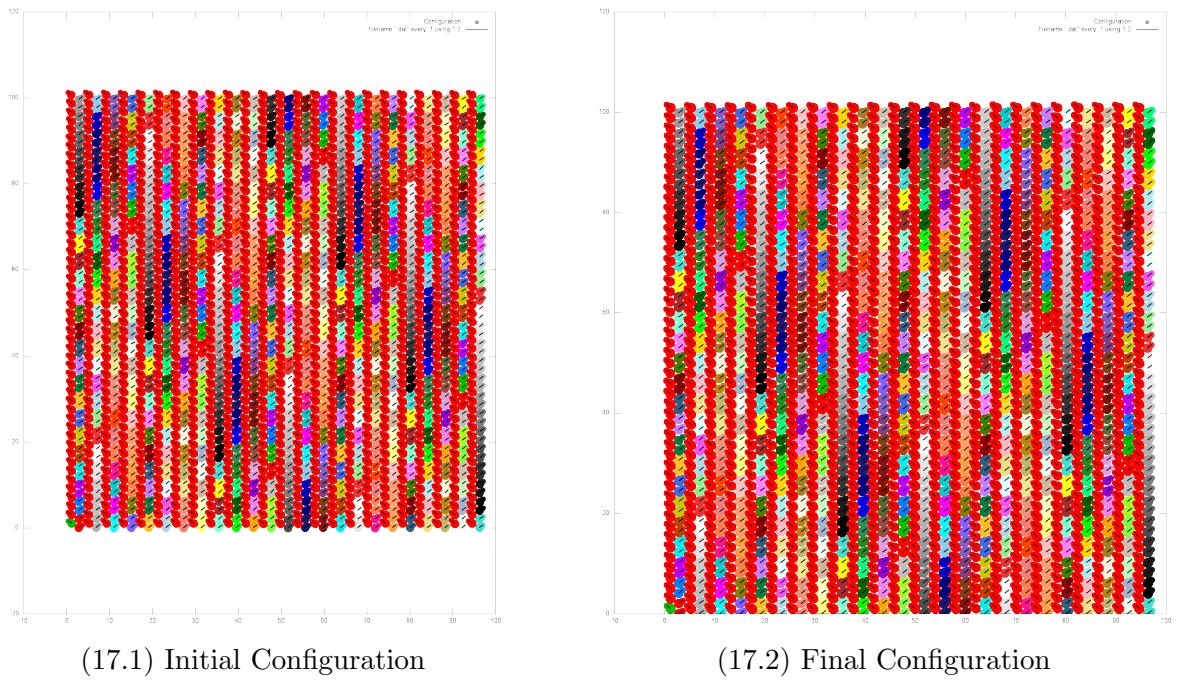


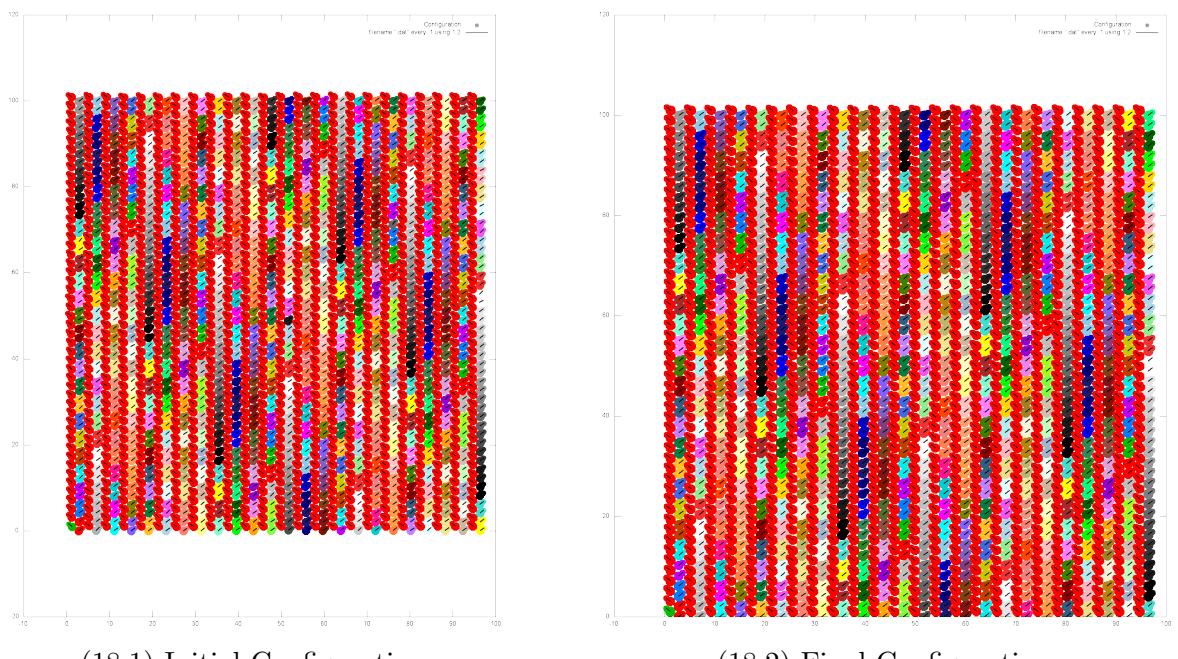
Figure 16: Snowman: Temp= 0.2,  $r = 0.637556$ ,  $d = 1.0$ , pg



(17.1) Initial Configuration

(17.2) Final Configuration

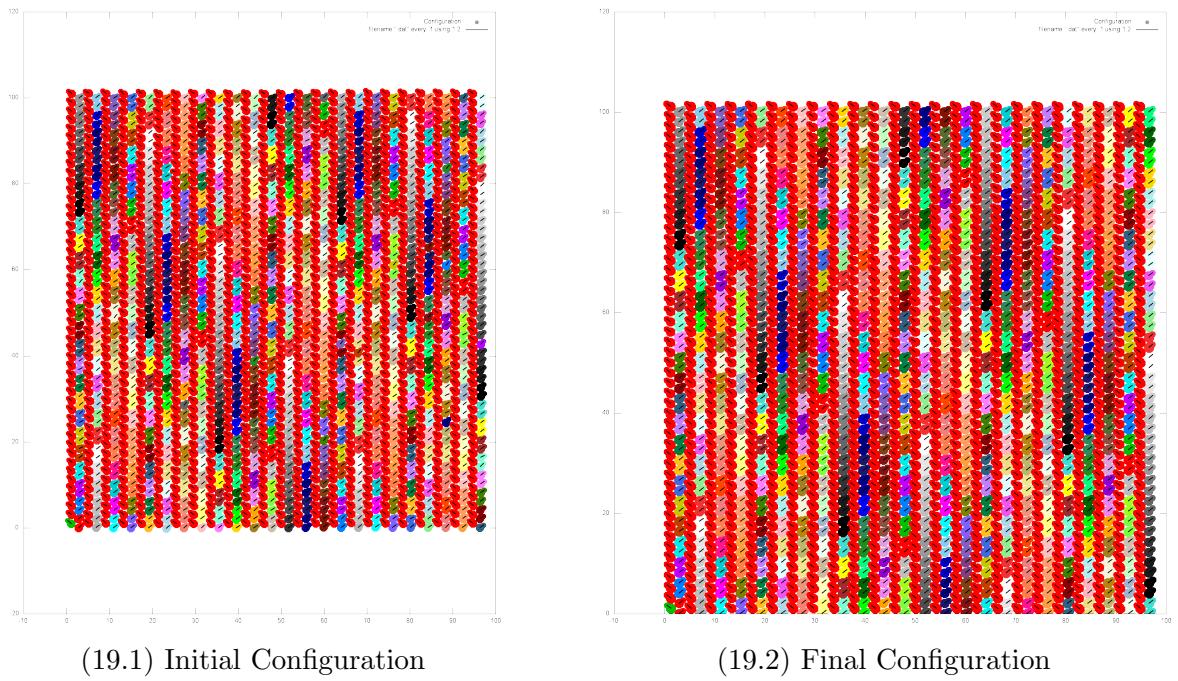
Figure 17: Snowman: Temp= 0.3,  $r = 0.637556$ ,  $d = 1.0$ , pg



(18.1) Initial Configuration

(18.2) Final Configuration

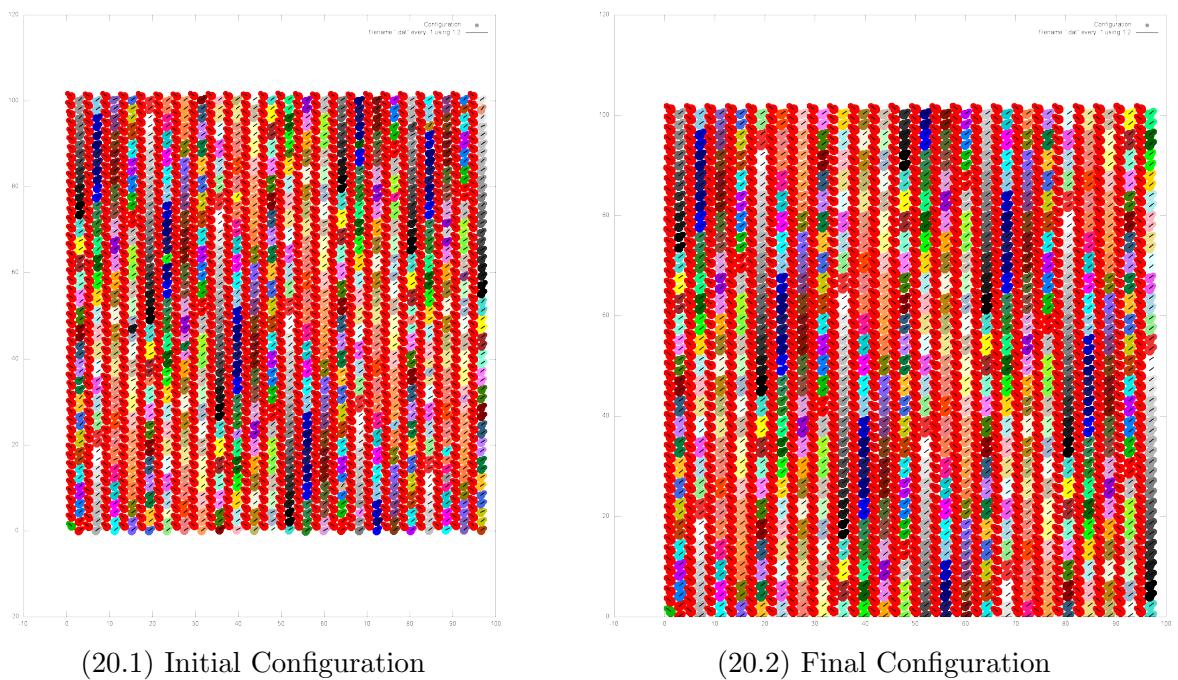
Figure 18: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg



(19.1) Initial Configuration

(19.2) Final Configuration

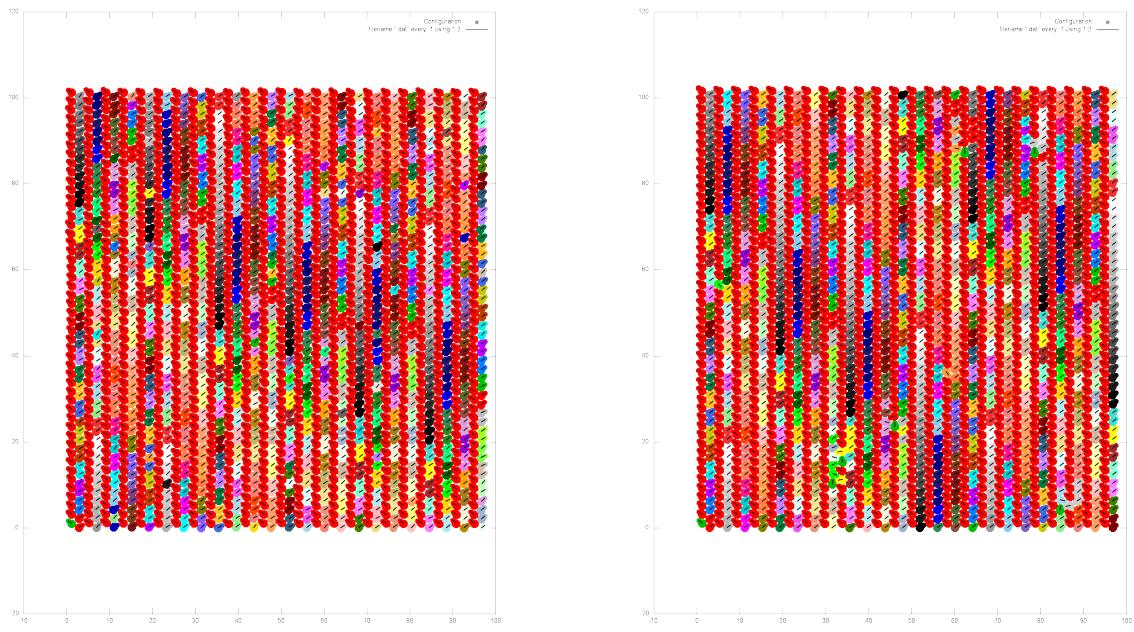
Figure 19: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg



(20.1) Initial Configuration

(20.2) Final Configuration

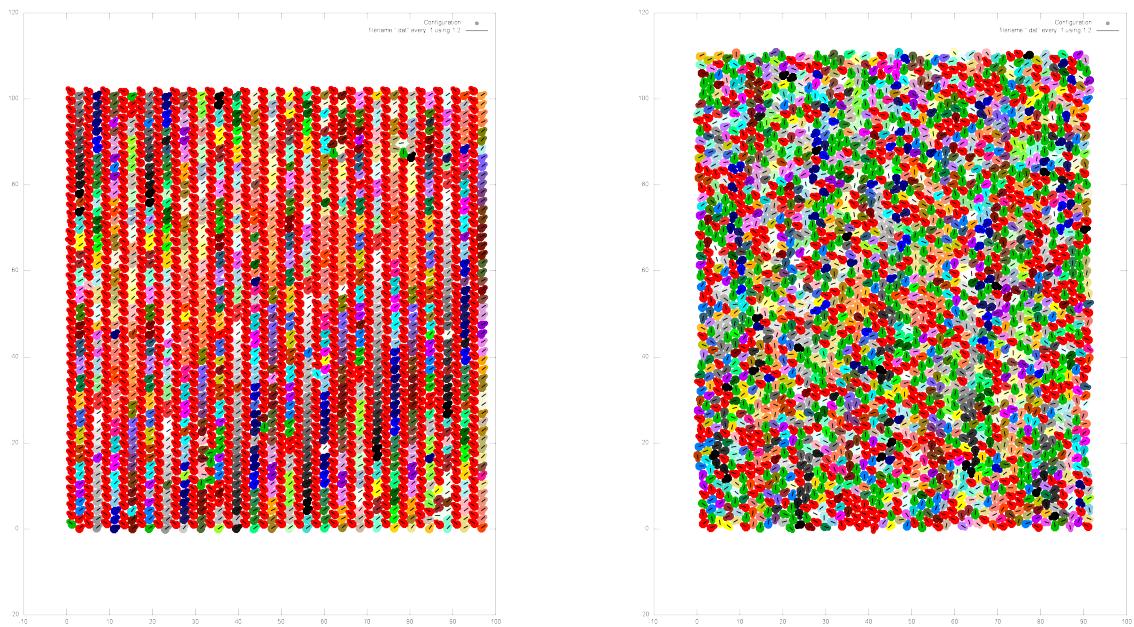
Figure 20: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg



(21.1) Initial Configuration

(21.2) Final Configuration

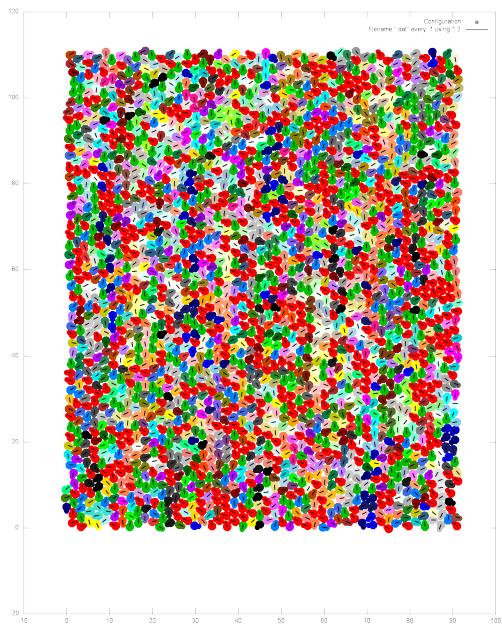
Figure 21: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg



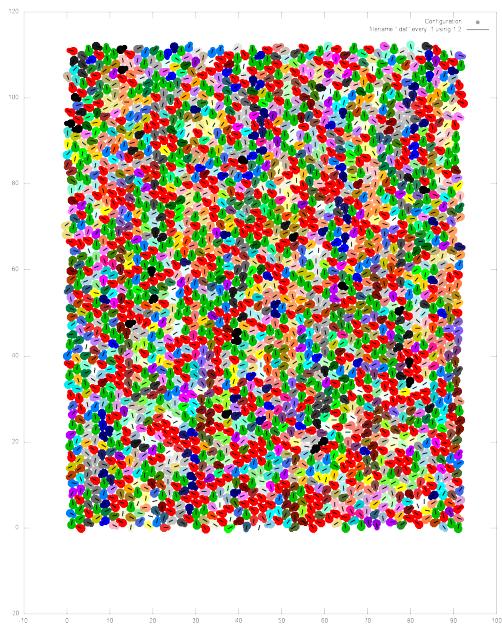
(22.1) Initial Configuration

(22.2) Final Configuration

Figure 22: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

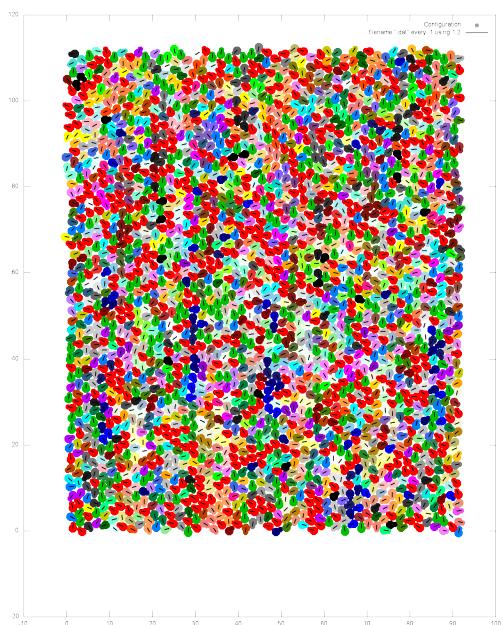


### (23.1) Initial Configuration

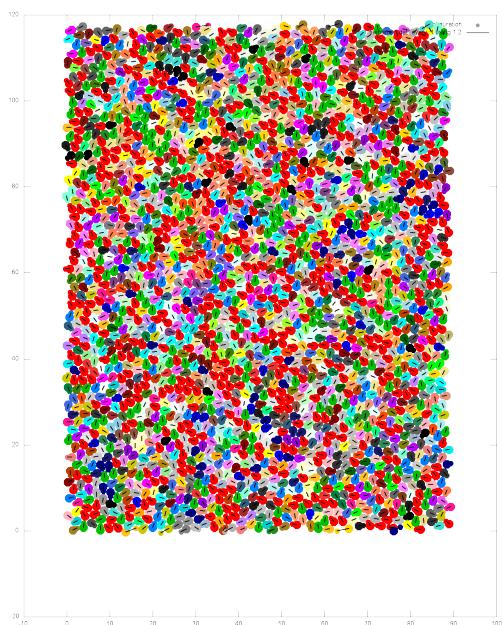


### (23.2) Final Configuration

Figure 23: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

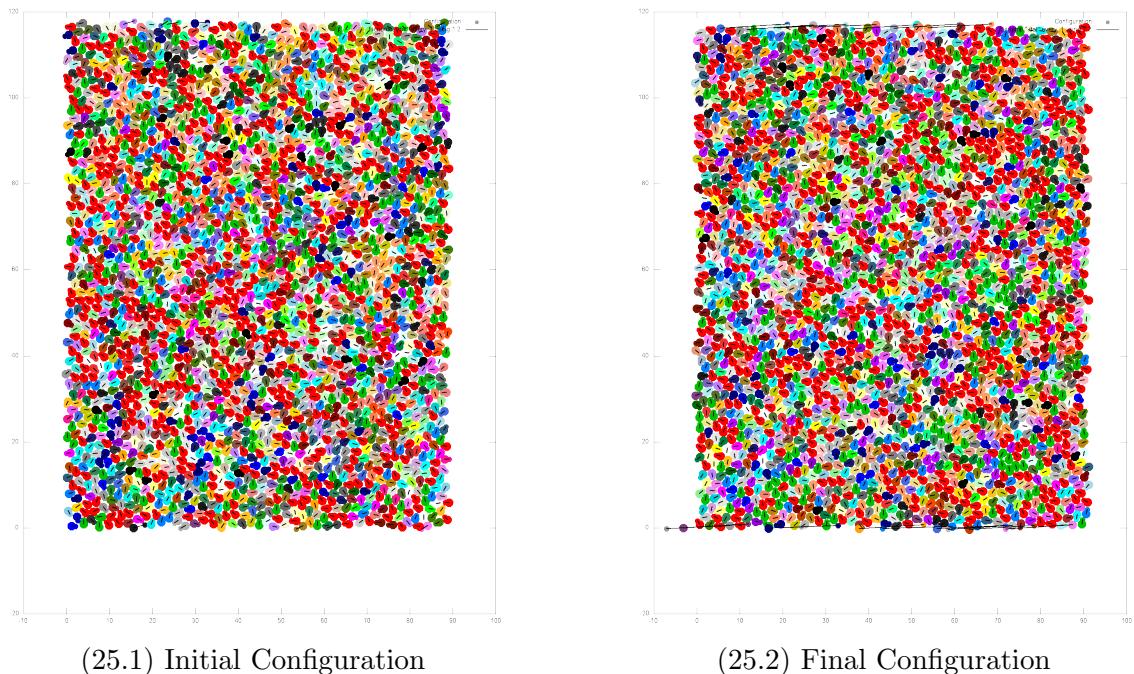


### (24.1) Initial Configuration



#### (24.2) Final Configuration

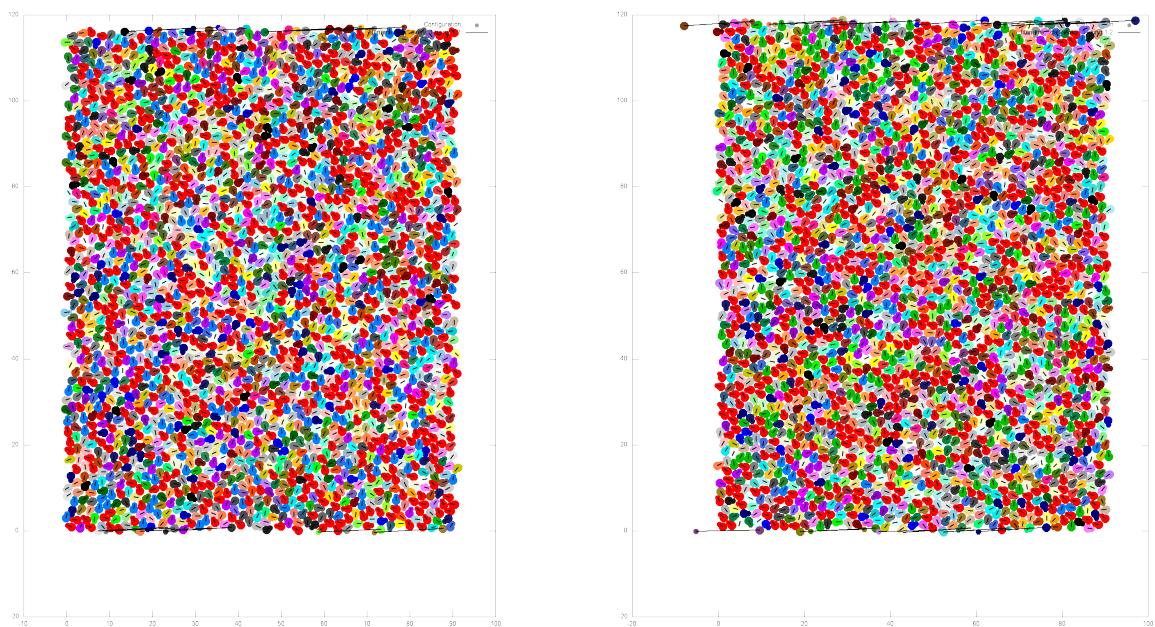
Figure 24: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg



(25.1) Initial Configuration

(25.2) Final Configuration

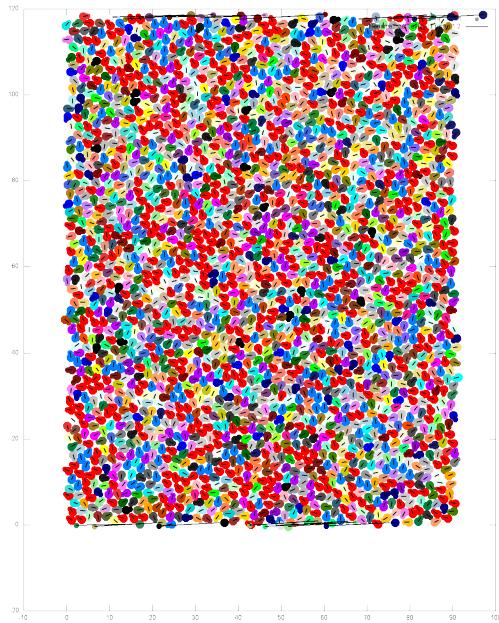
Figure 25: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg



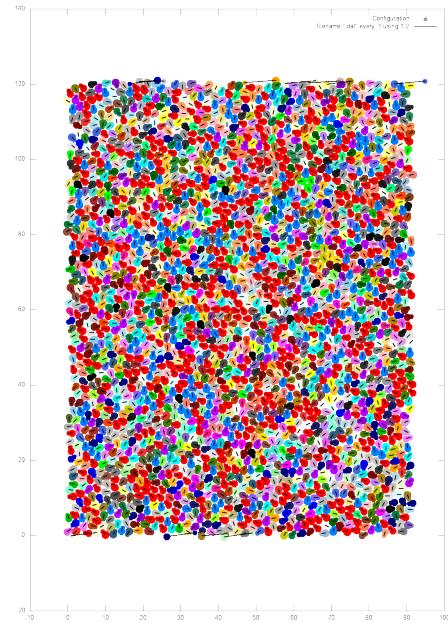
(26.1) Initial Configuration

(26.2) Final Configuration

Figure 26: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

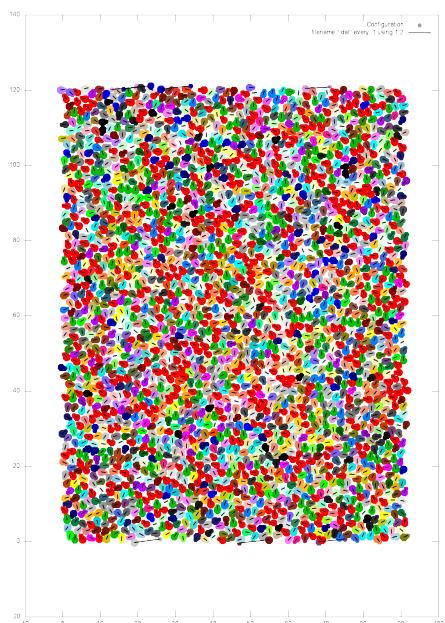


(27.1) Initial Configuration

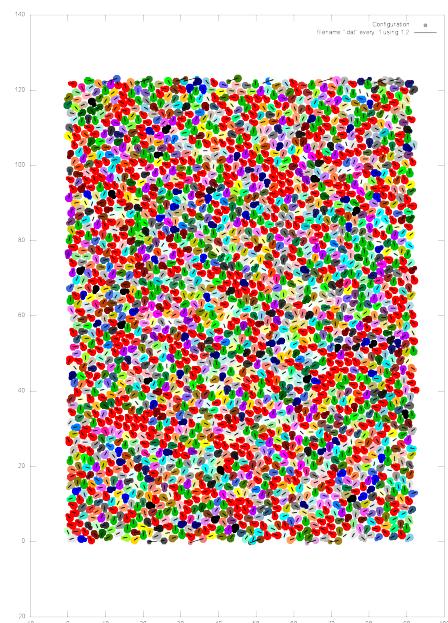


(27.2) Final Configuration

Figure 27: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg



(28.1) Initial Configuration



(28.2) Final Configuration

Figure 28: Snowman: Temp= 5.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

### 3 Angle Distribution

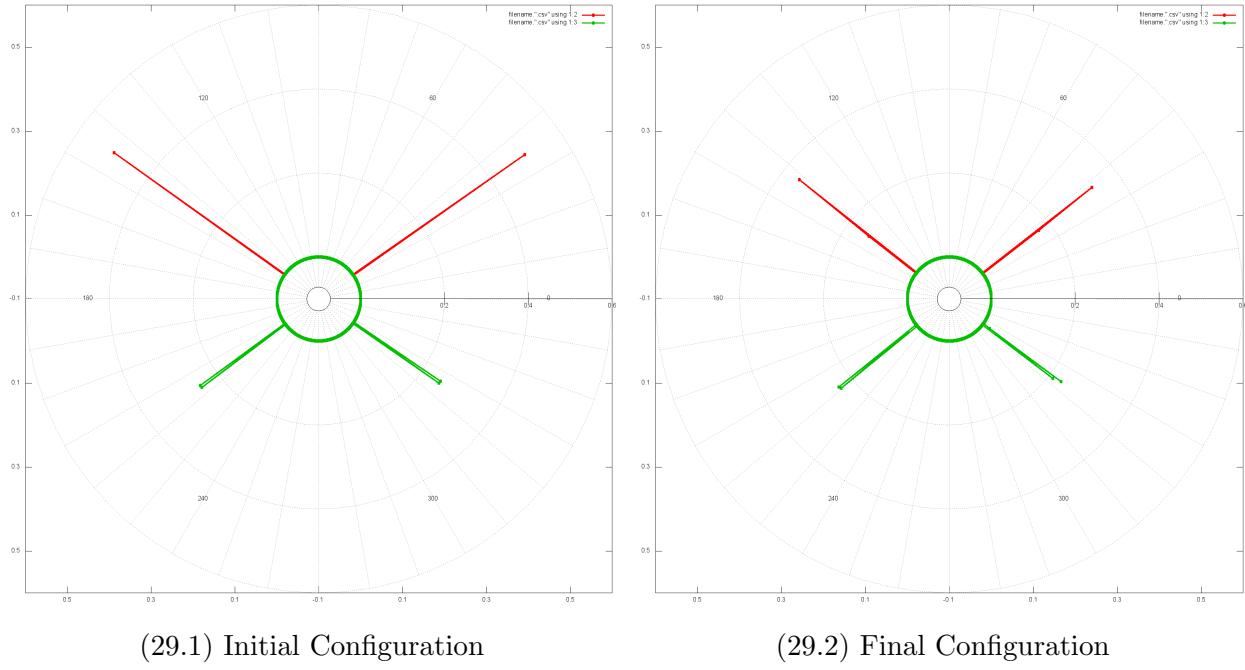


Figure 29: Snowman: Temp= 0.2,  $r = 0.637556$ ,  $d = 1.0$ , pg

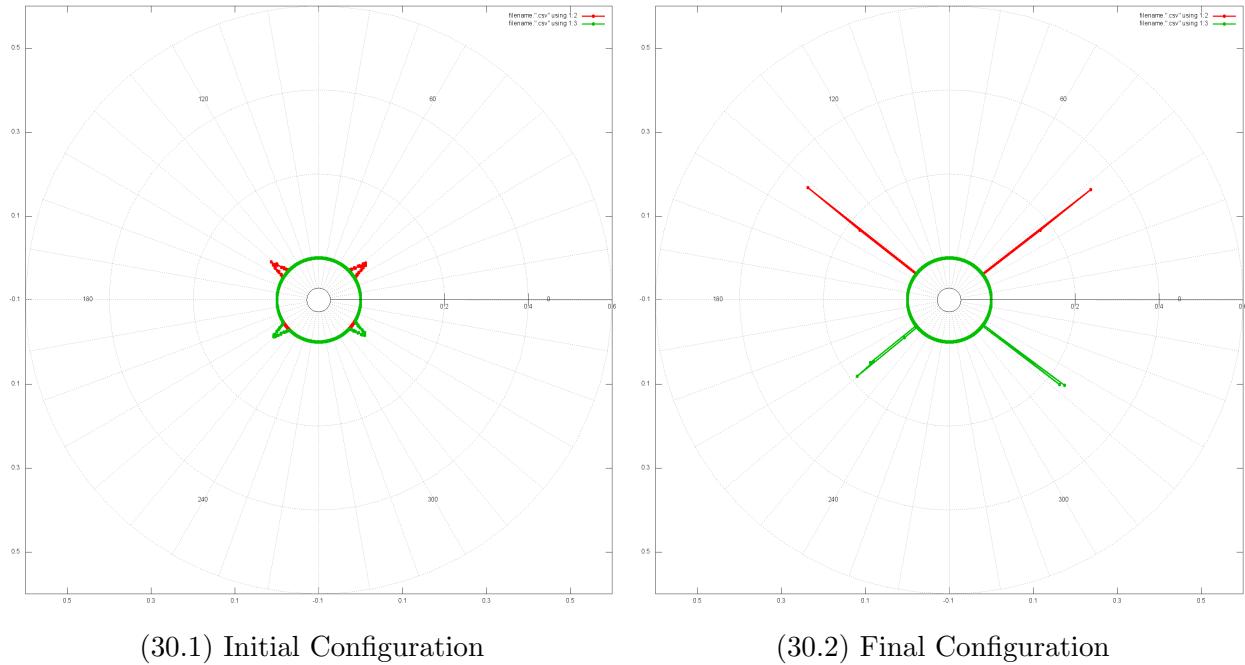
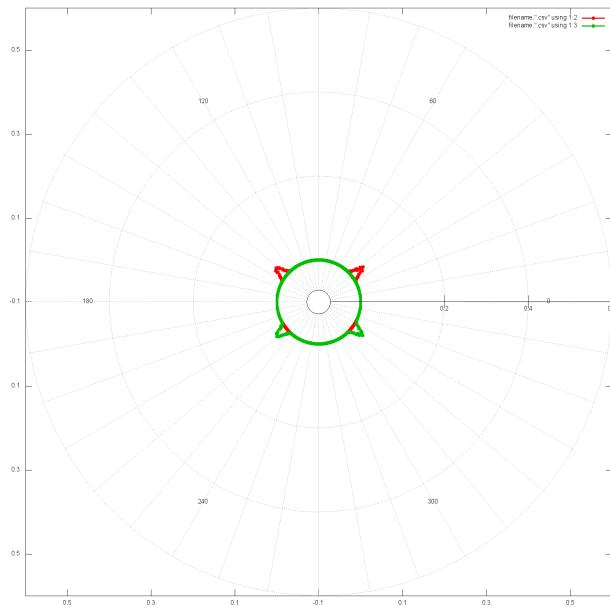
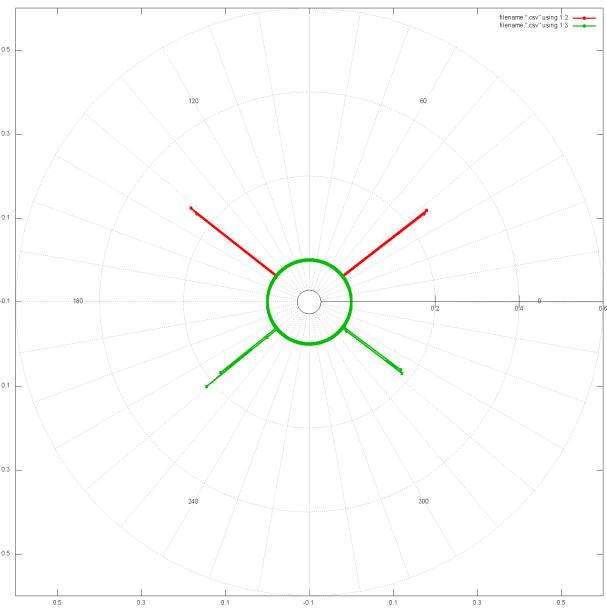


Figure 30: Snowman: Temp= 0.3,  $r = 0.637556$ ,  $d = 1.0$ , pg

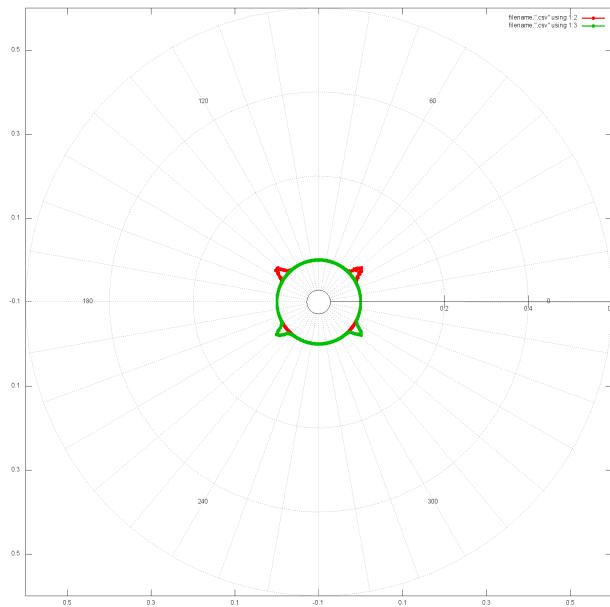


(31.1) Initial Configuration

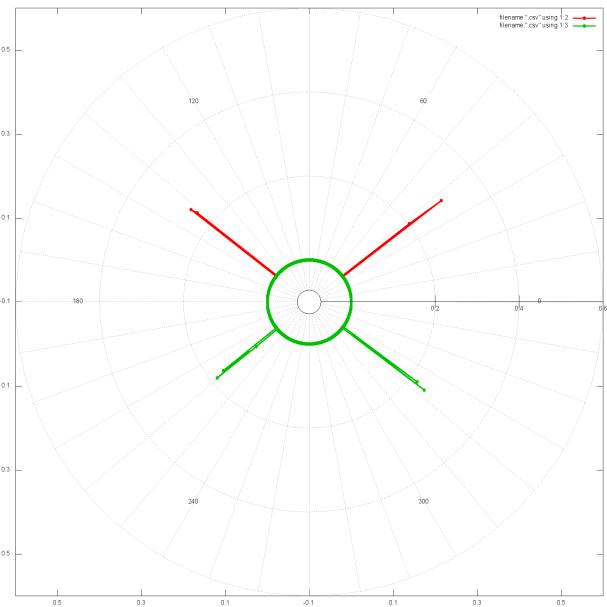


(31.2) Final Configuration

Figure 31: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg

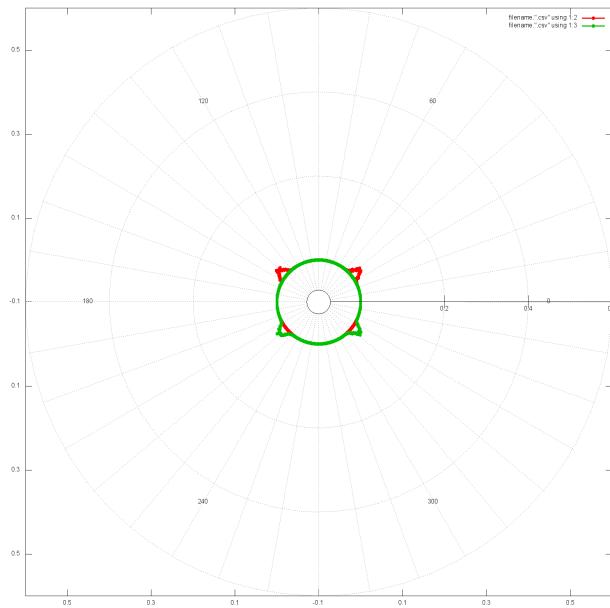


(32.1) Initial Configuration

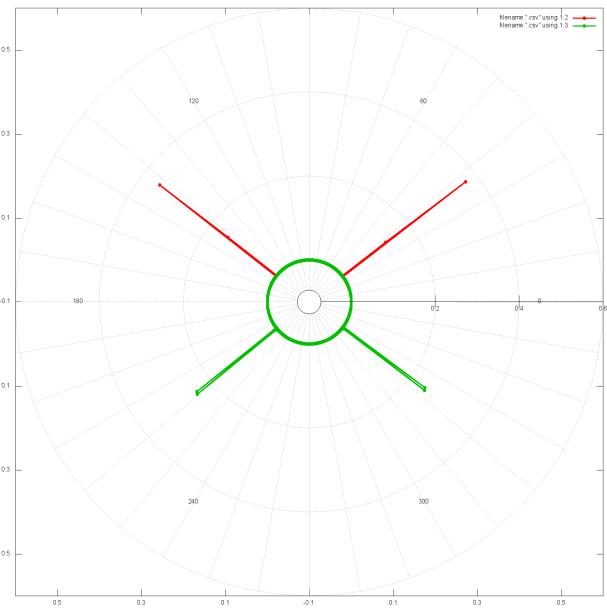


(32.2) Final Configuration

Figure 32: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

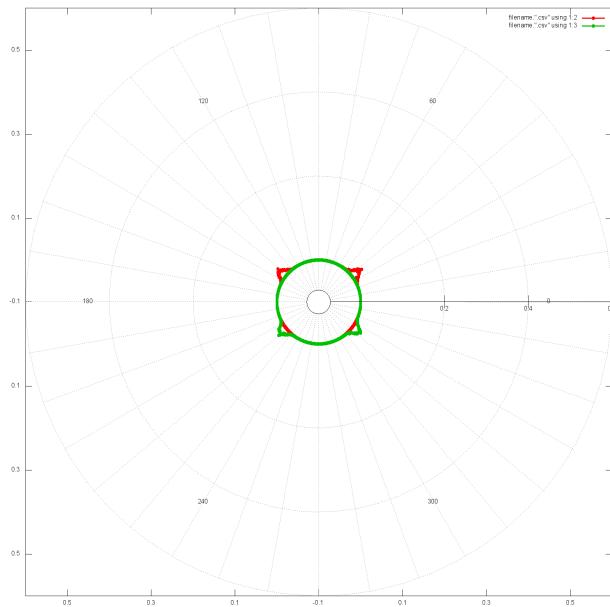


(33.1) Initial Configuration

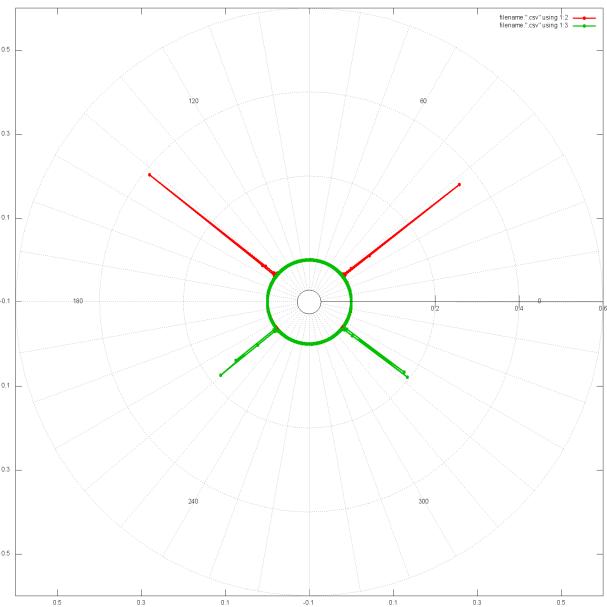


(33.2) Final Configuration

Figure 33: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg

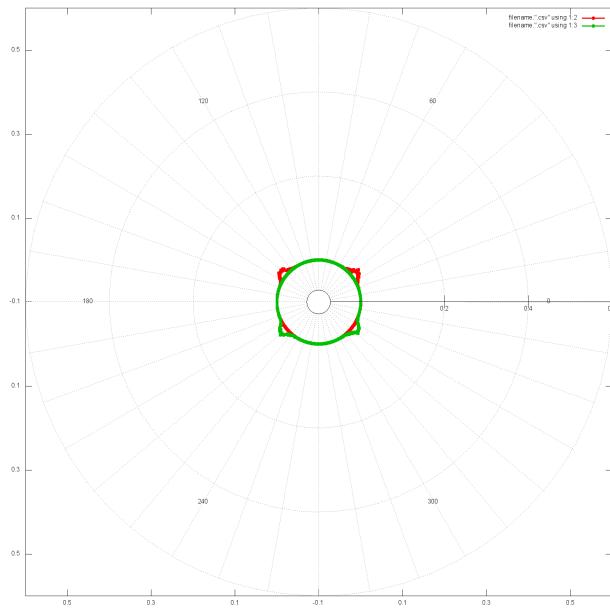


(34.1) Initial Configuration

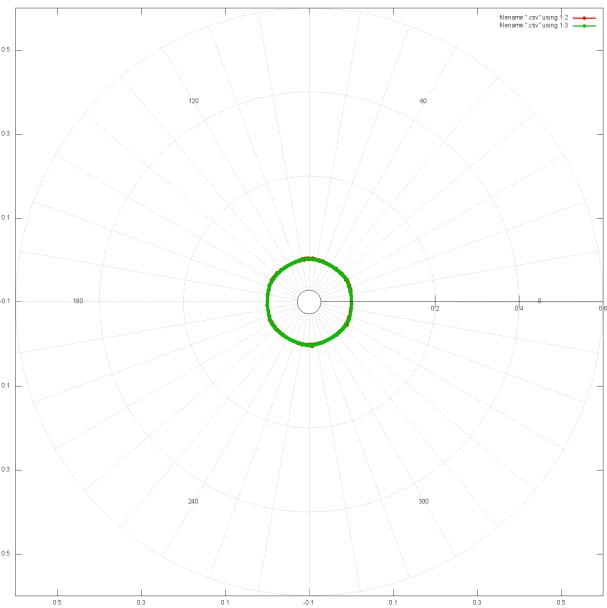


(34.2) Final Configuration

Figure 34: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

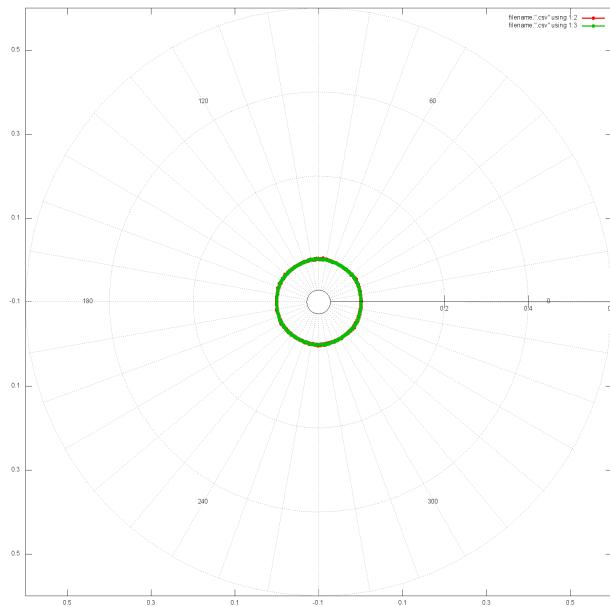


(35.1) Initial Configuration

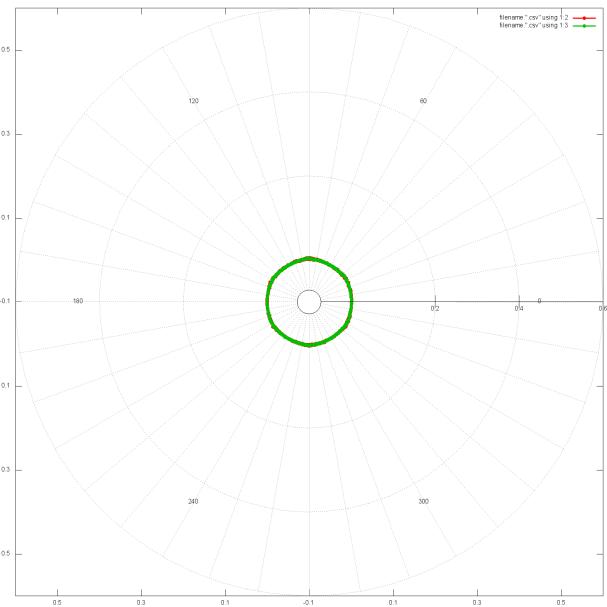


(35.2) Final Configuration

Figure 35: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

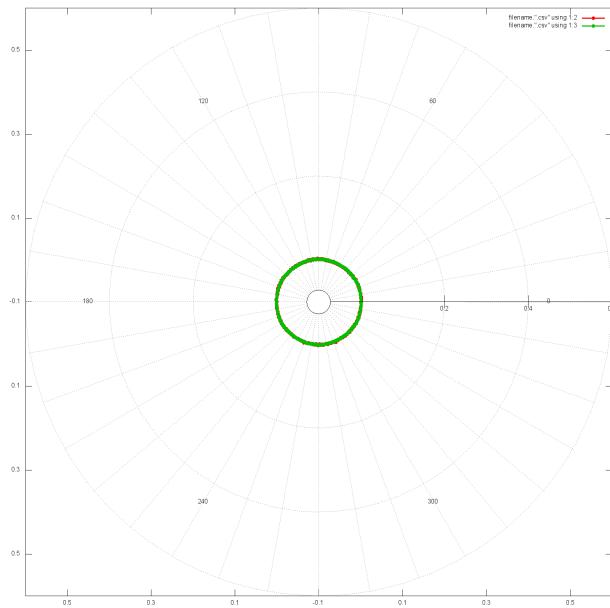


(36.1) Initial Configuration

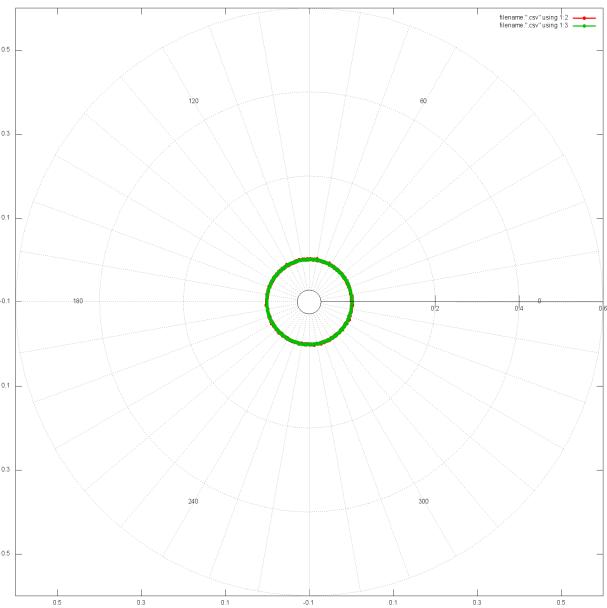


(36.2) Final Configuration

Figure 36: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

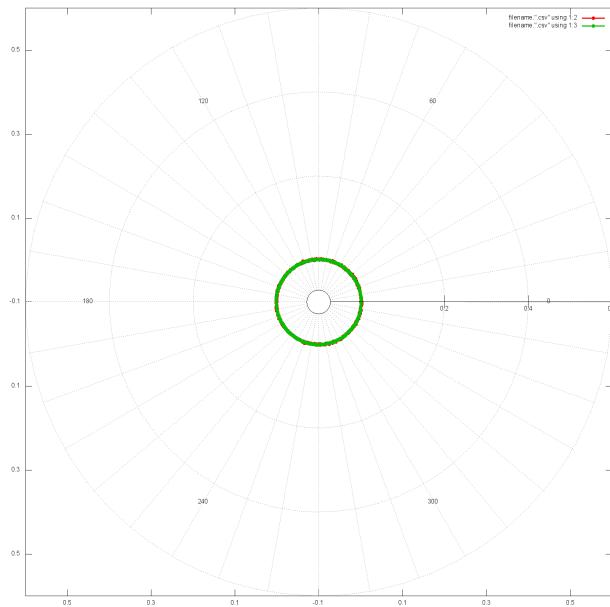


(37.1) Initial Configuration

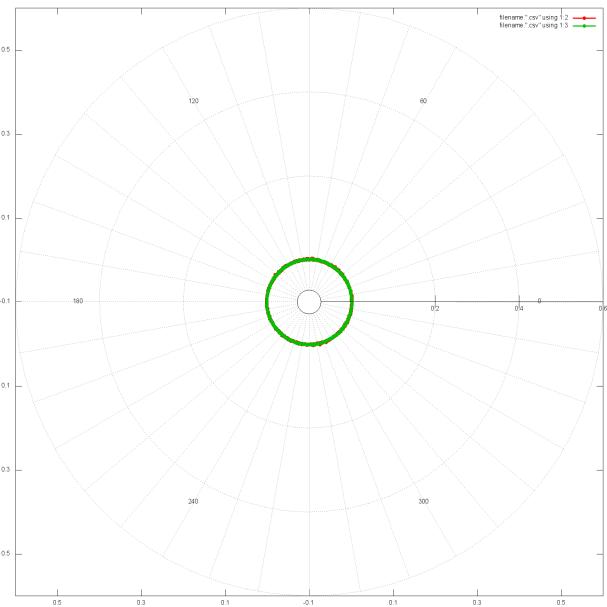


(37.2) Final Configuration

Figure 37: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

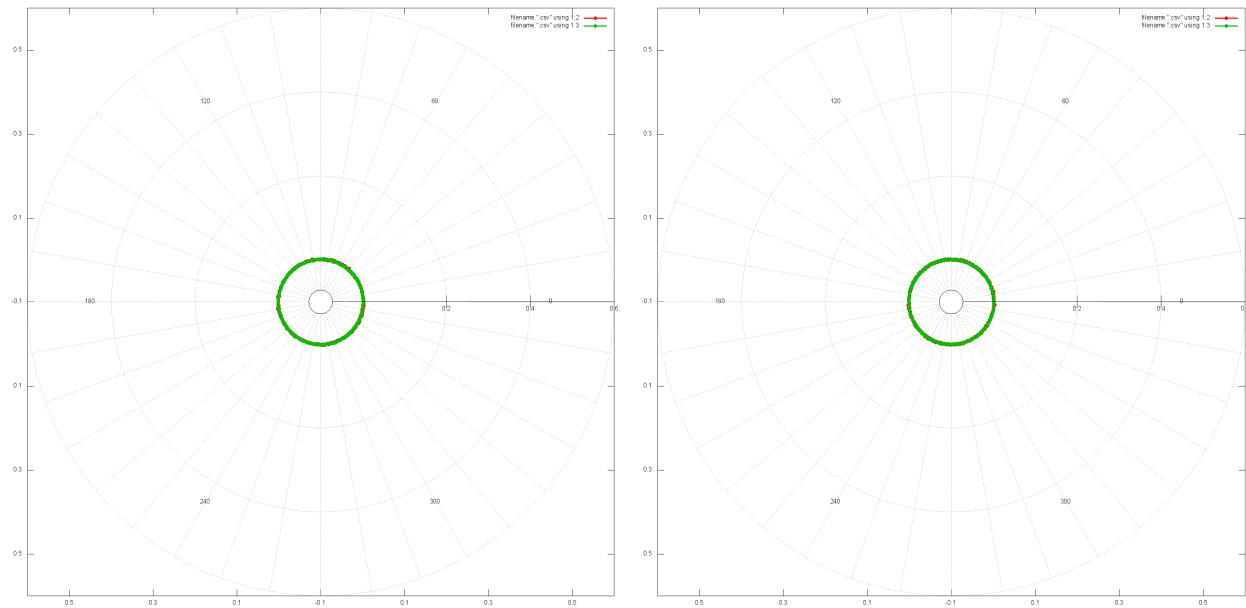


(38.1) Initial Configuration



(38.2) Final Configuration

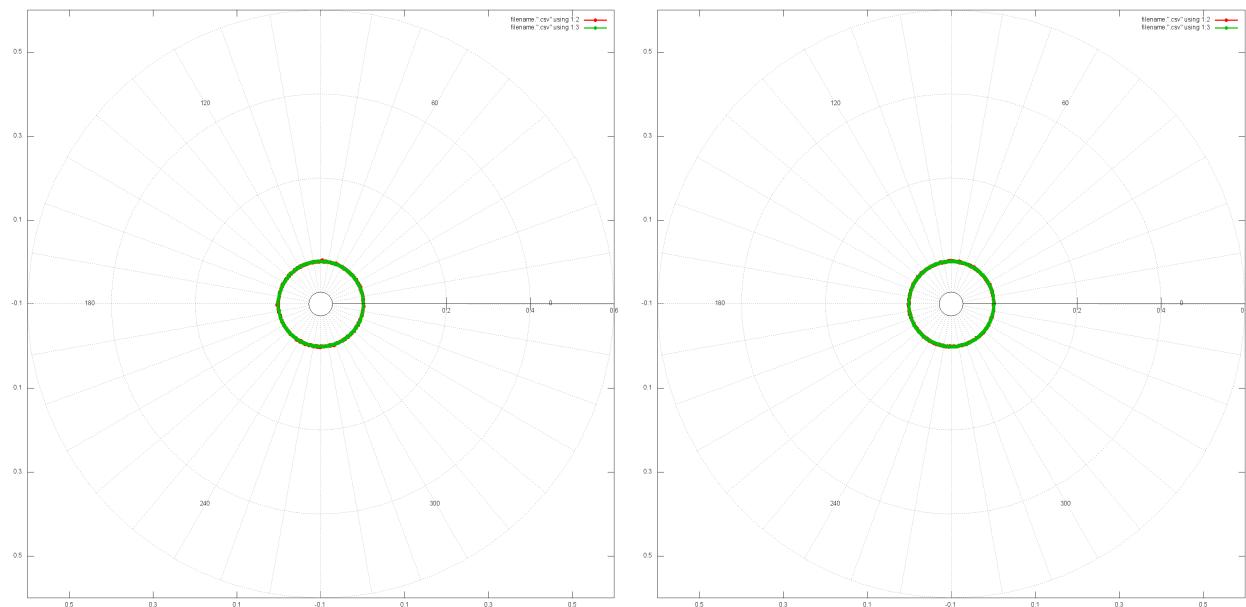
Figure 38: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg



(39.1) Initial Configuration

(39.2) Final Configuration

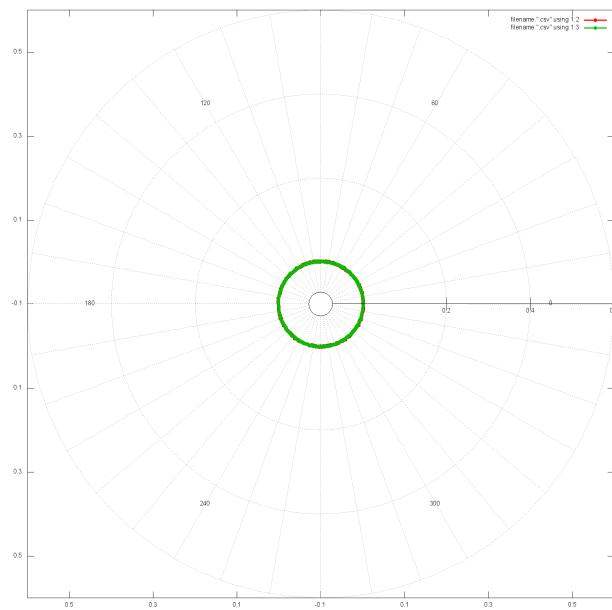
Figure 39: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg



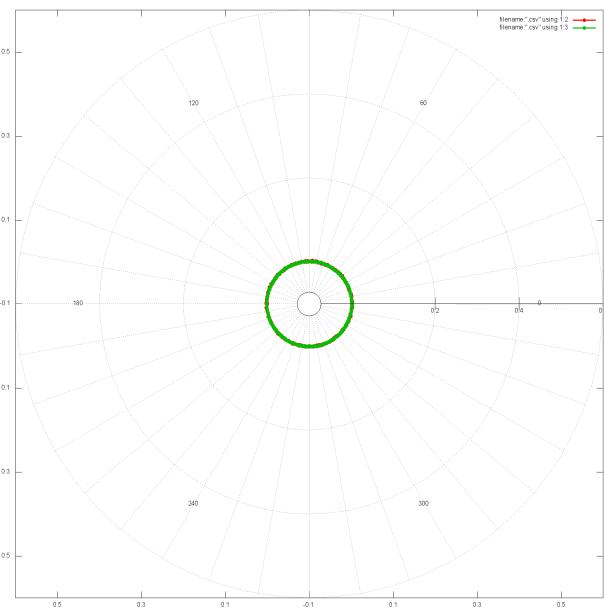
(40.1) Initial Configuration

(40.2) Final Configuration

Figure 40: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg



(41.1) Initial Configuration



(41.2) Final Configuration

Figure 41: Snowman: Temp= 5.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

## 4 Short Range Ordering

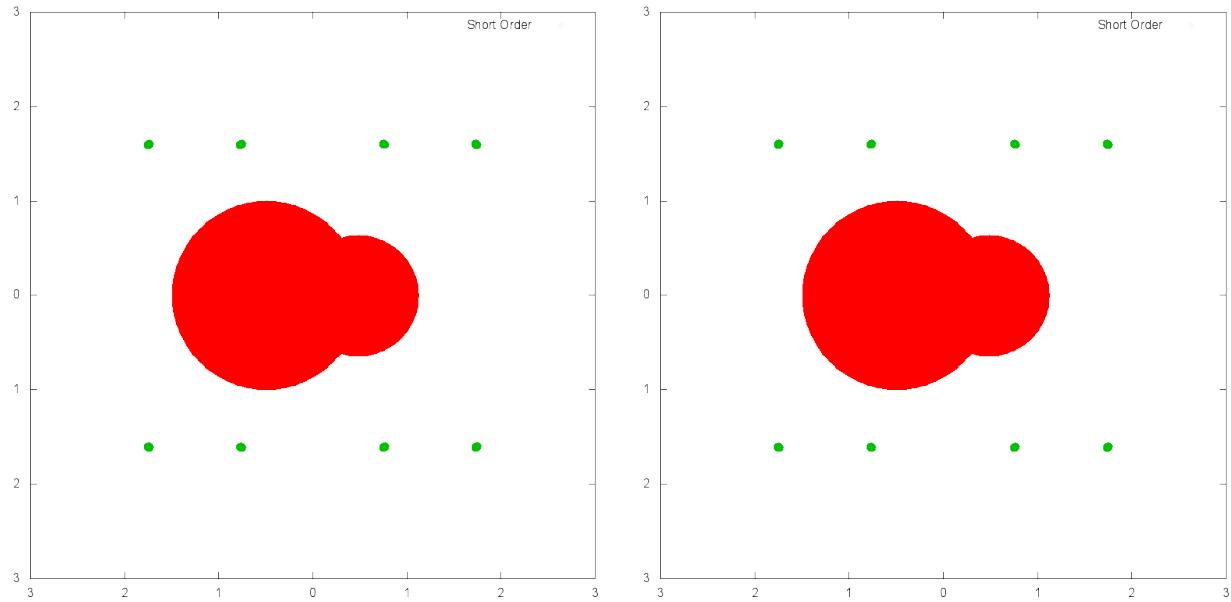


Figure 42: Snowman: Temp= 0.2,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 43: Snowman: Temp= 0.3,  $r = 0.637556$ ,  $d = 1.0$ , pg

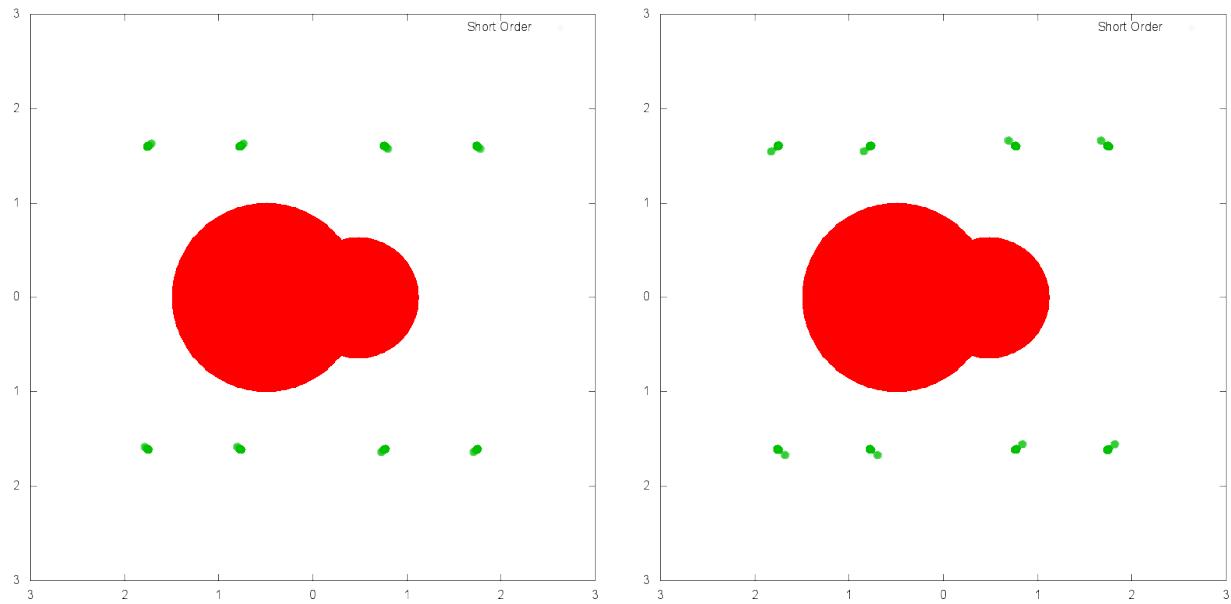


Figure 44: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 45: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

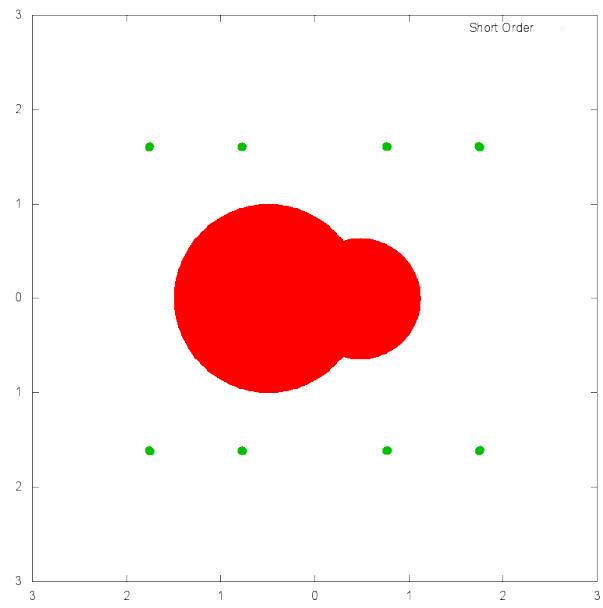


Figure 46: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg

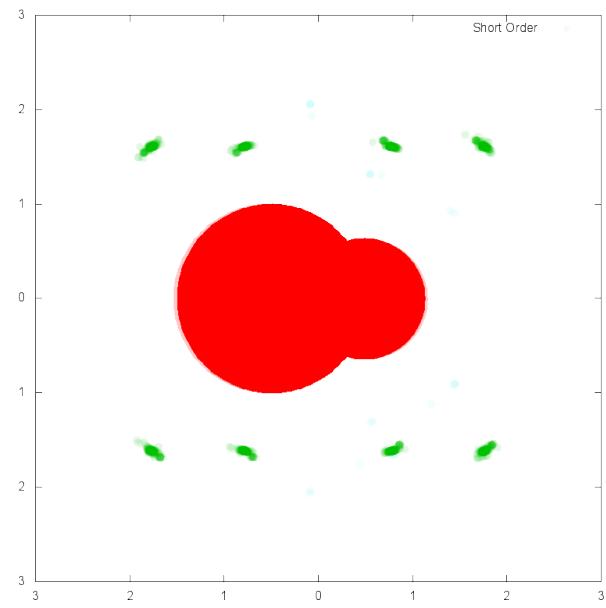


Figure 47: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

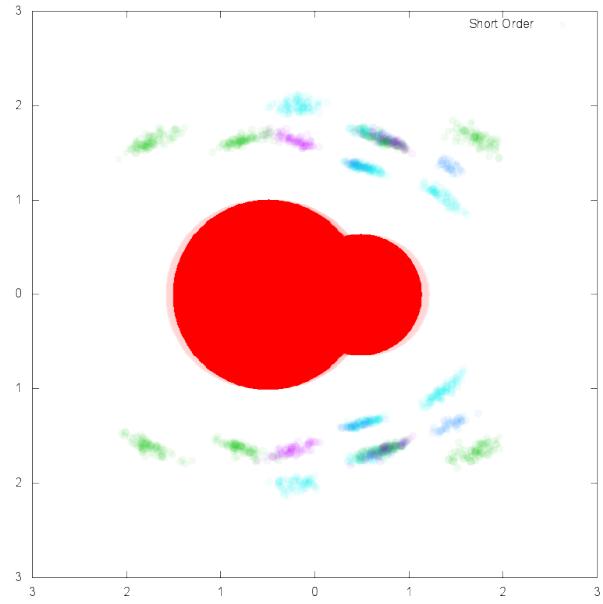


Figure 48: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

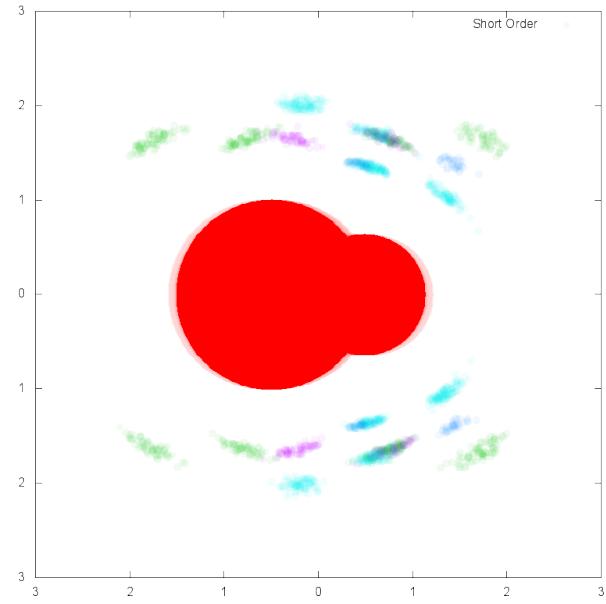


Figure 49: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

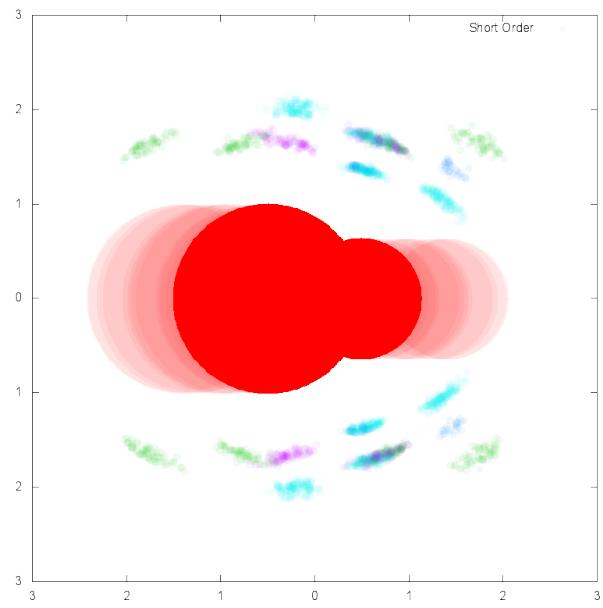


Figure 50: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

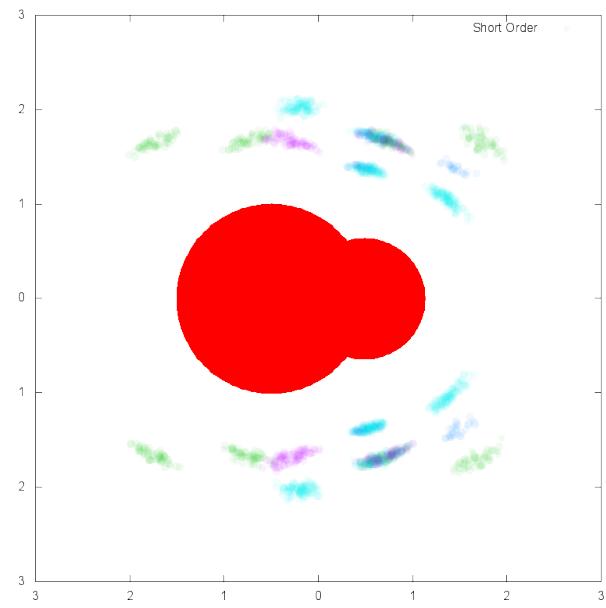


Figure 51: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

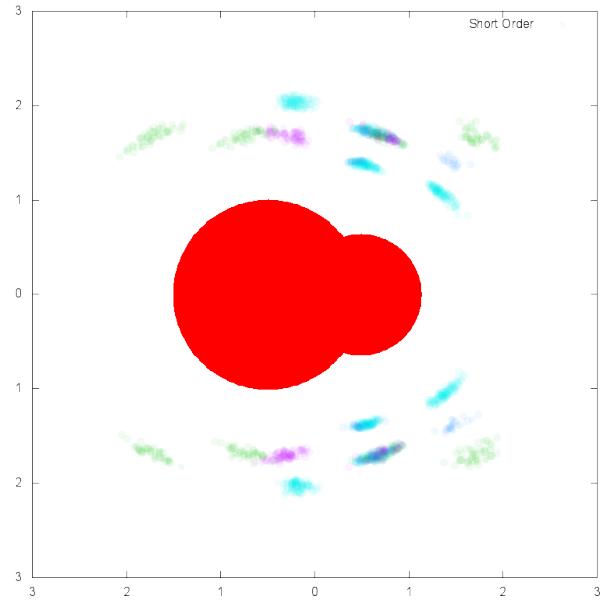


Figure 52: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

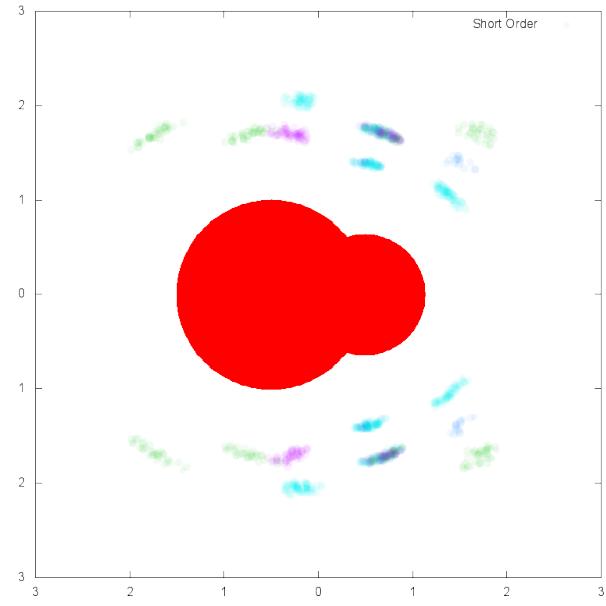


Figure 53: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

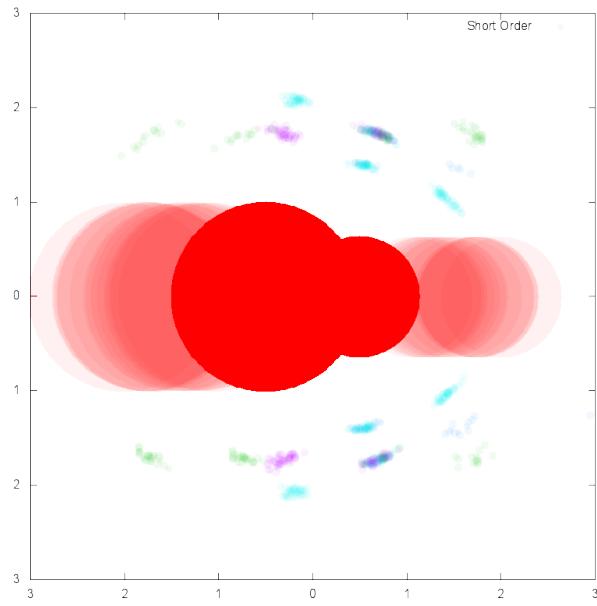


Figure 54: Snowman: Temp= 5.0,  $r$  = 0.637556,  $d$  = 1.0, pg

## 5 Mean Squared Displacement

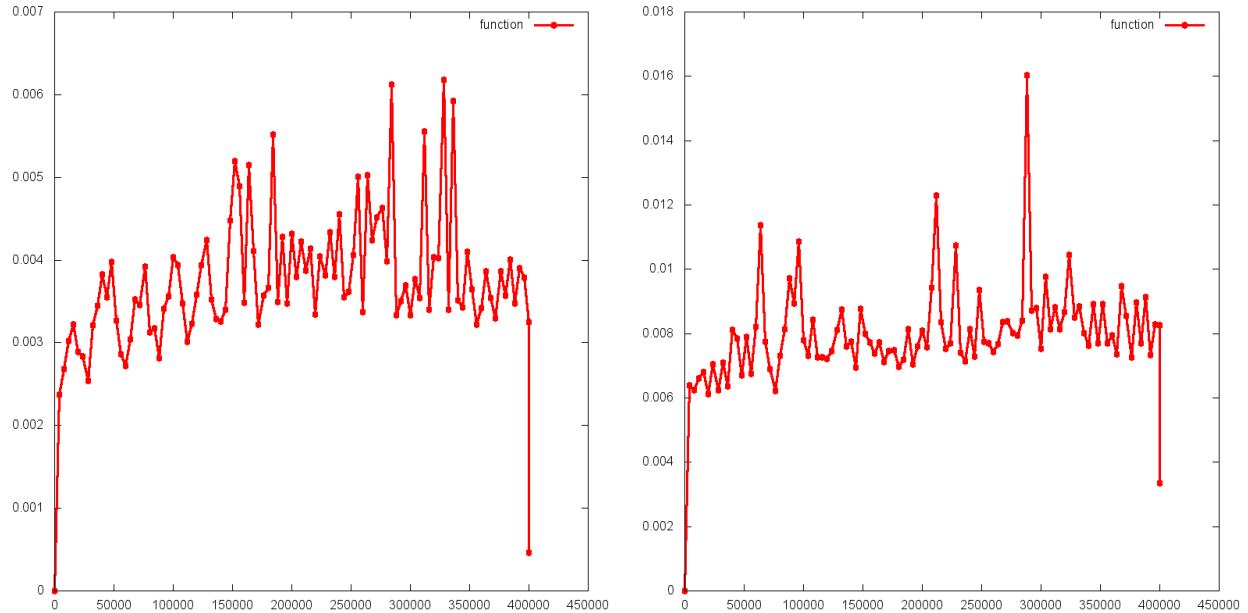


Figure 55: Snowman: Temp= 0.2,  $r$  = 0.637556,  $d$  = 1.0, pg

Figure 56: Snowman: Temp= 0.3,  $r$  = 0.637556,  $d$  = 1.0, pg

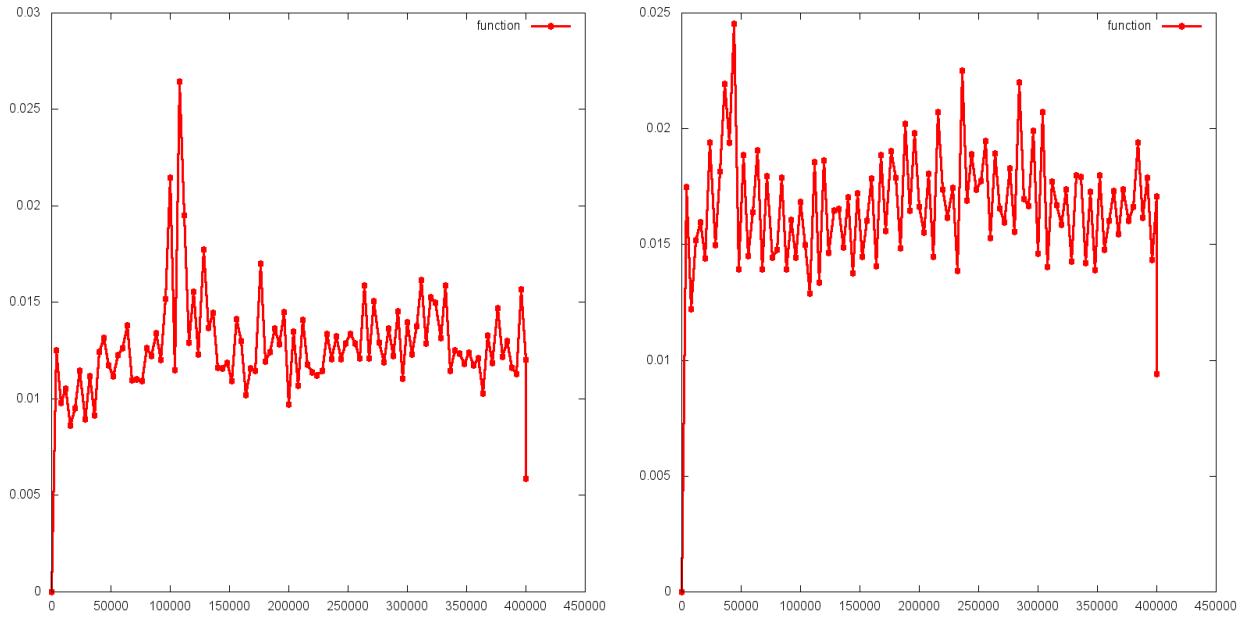


Figure 57: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 58: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

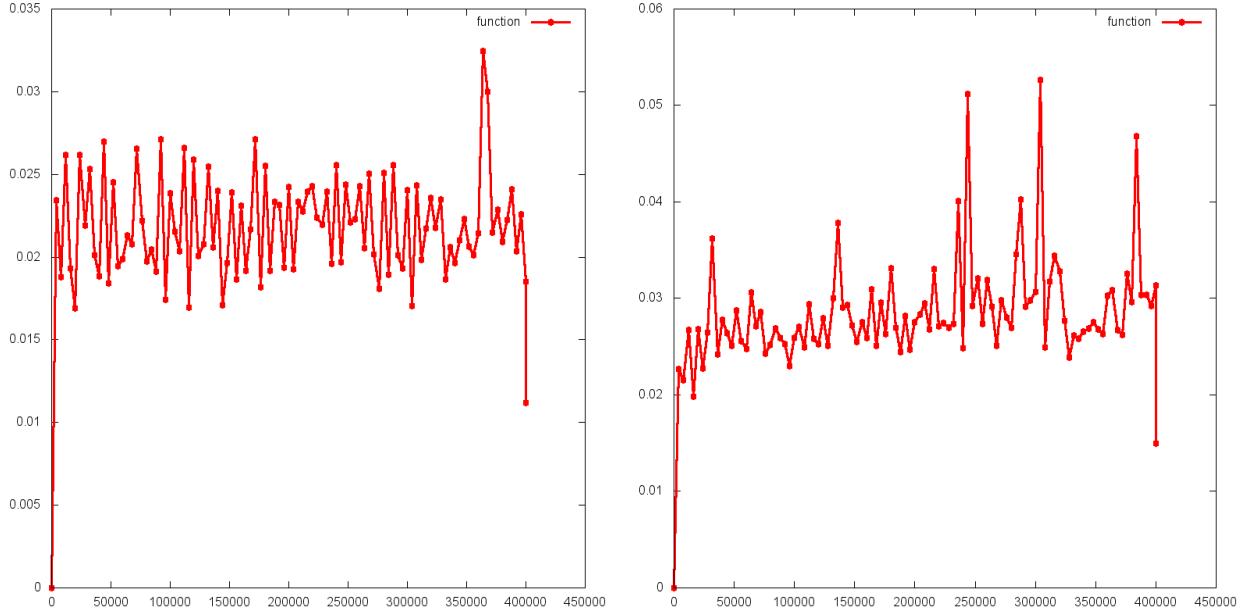


Figure 59: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 60: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

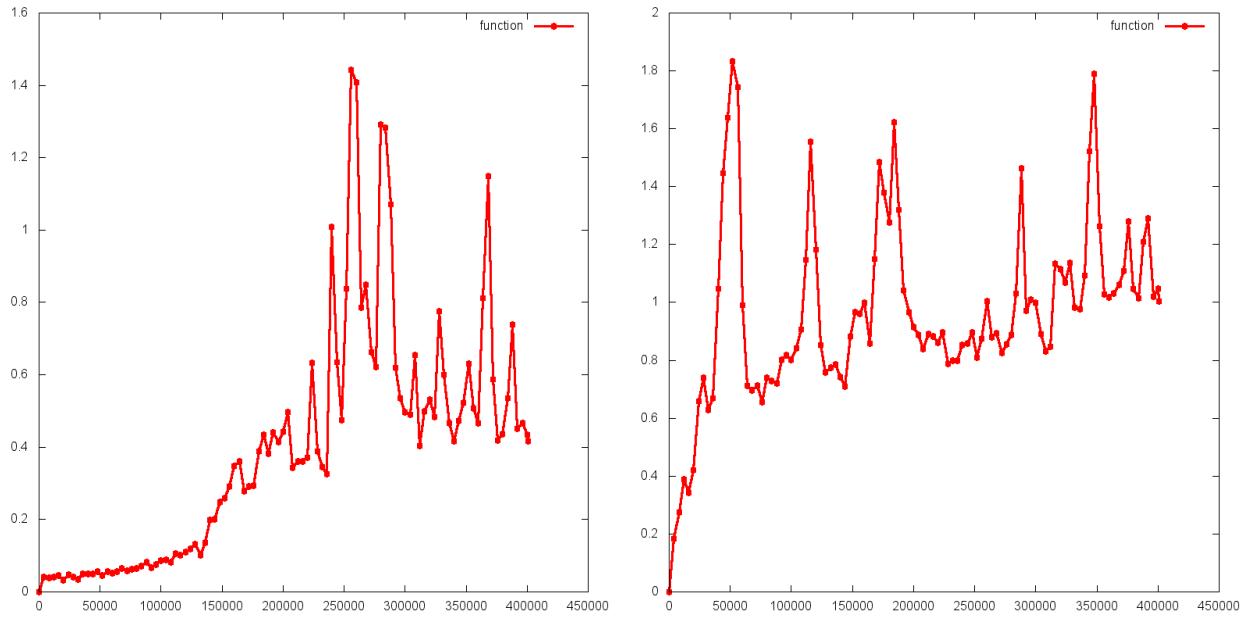


Figure 61: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 62: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

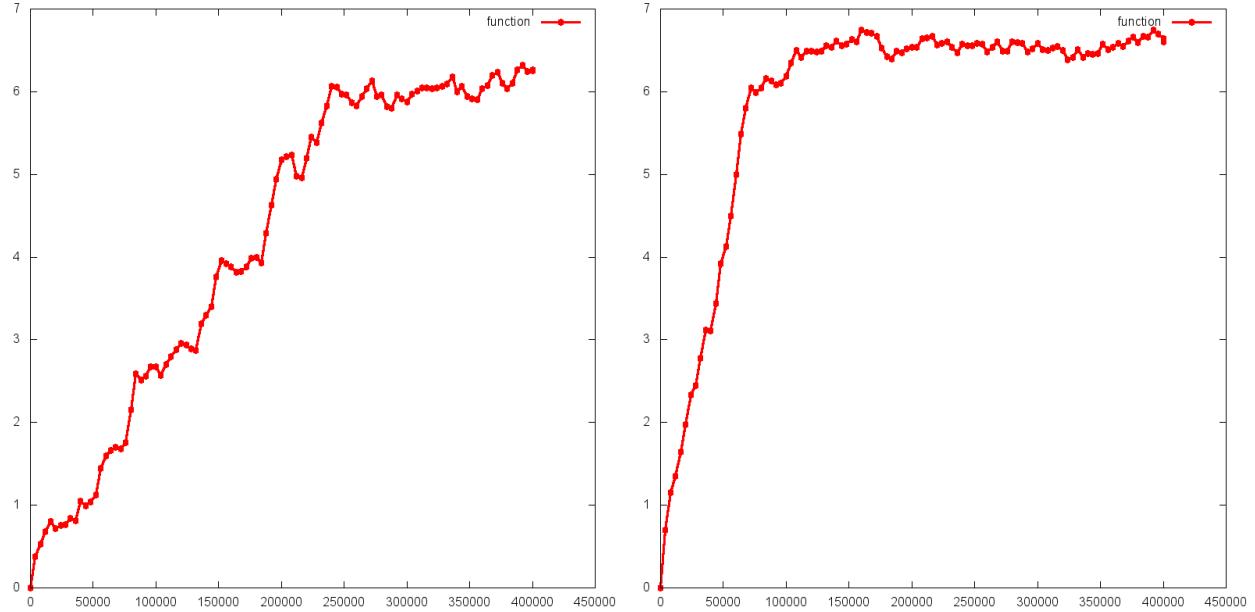


Figure 63: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 64: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

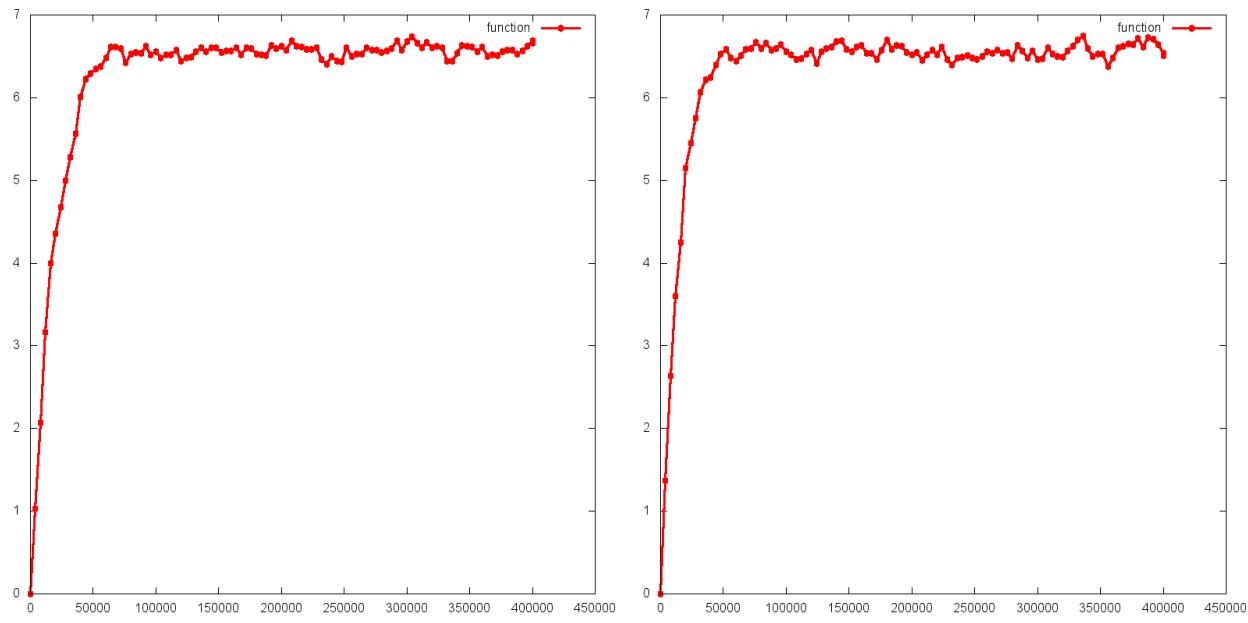


Figure 65: Snowman: Temp= 3.0,  $r =$  Figure 66: Snowman: Temp= 4.0,  $r =$   
0.637556,  $d = 1.0$ , pg 0.637556,  $d = 1.0$ , pg

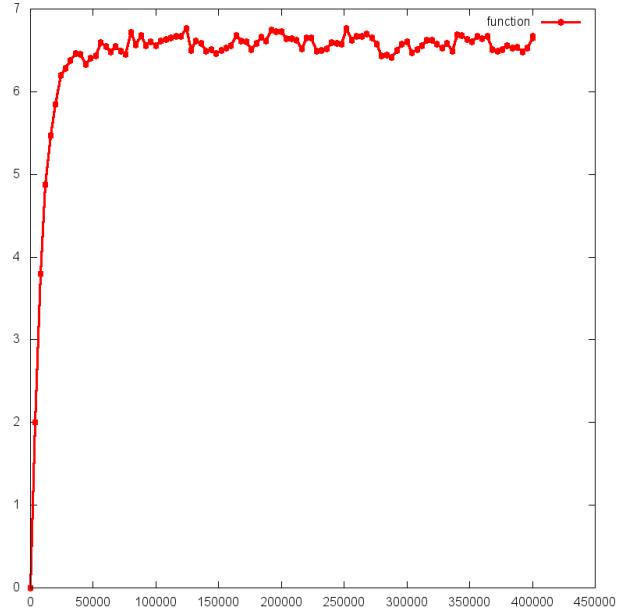


Figure 67: Snowman: Temp= 5.0,  $r =$   
0.637556,  $d = 1.0$ , pg

## 6 Rotational Relaxation

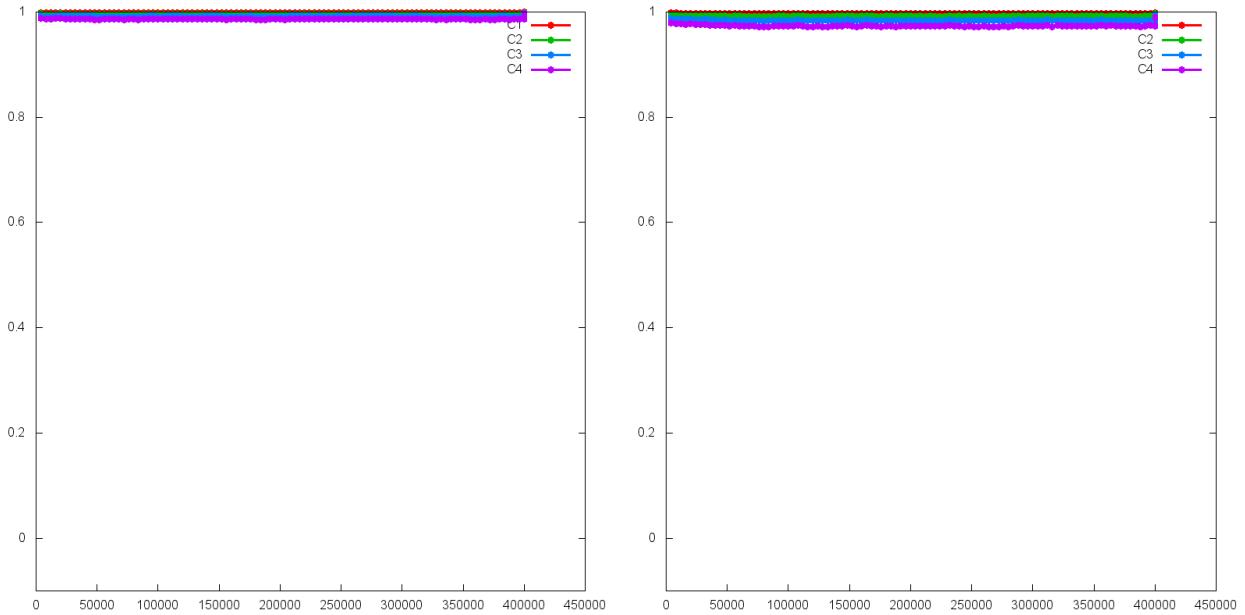


Figure 68: Snowman: Temp= 0.2,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 69: Snowman: Temp= 0.3,  $r = 0.637556$ ,  $d = 1.0$ , pg

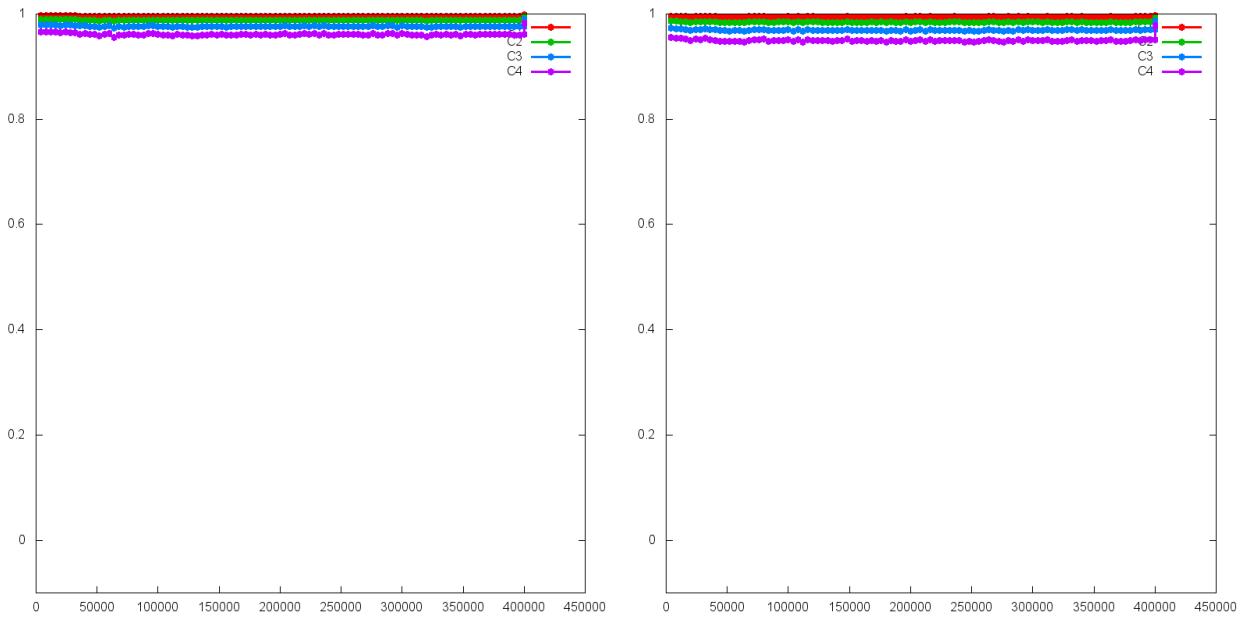


Figure 70: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 71: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

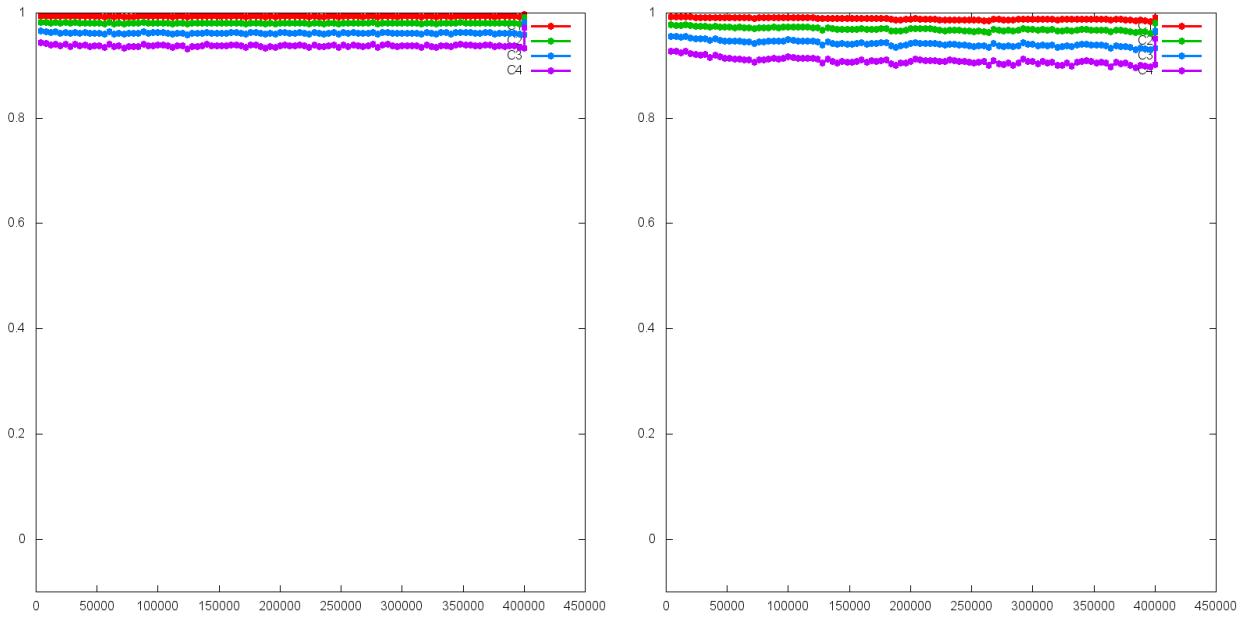


Figure 72: Snowman: Temp= 0.6,  $r =$  Figure 73: Snowman: Temp= 0.8,  $r =$   
0.637556,  $d = 1.0$ , pg

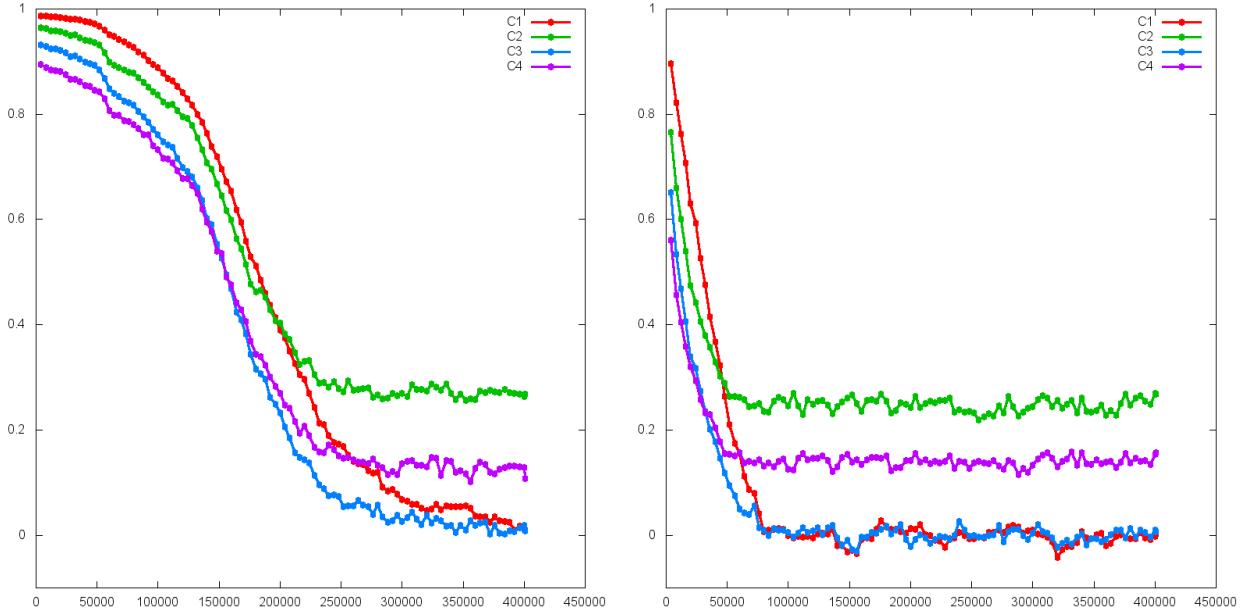


Figure 74: Snowman: Temp= 1.0,  $r =$  Figure 75: Snowman: Temp= 1.5,  $r =$   
0.637556,  $d = 1.0$ , pg

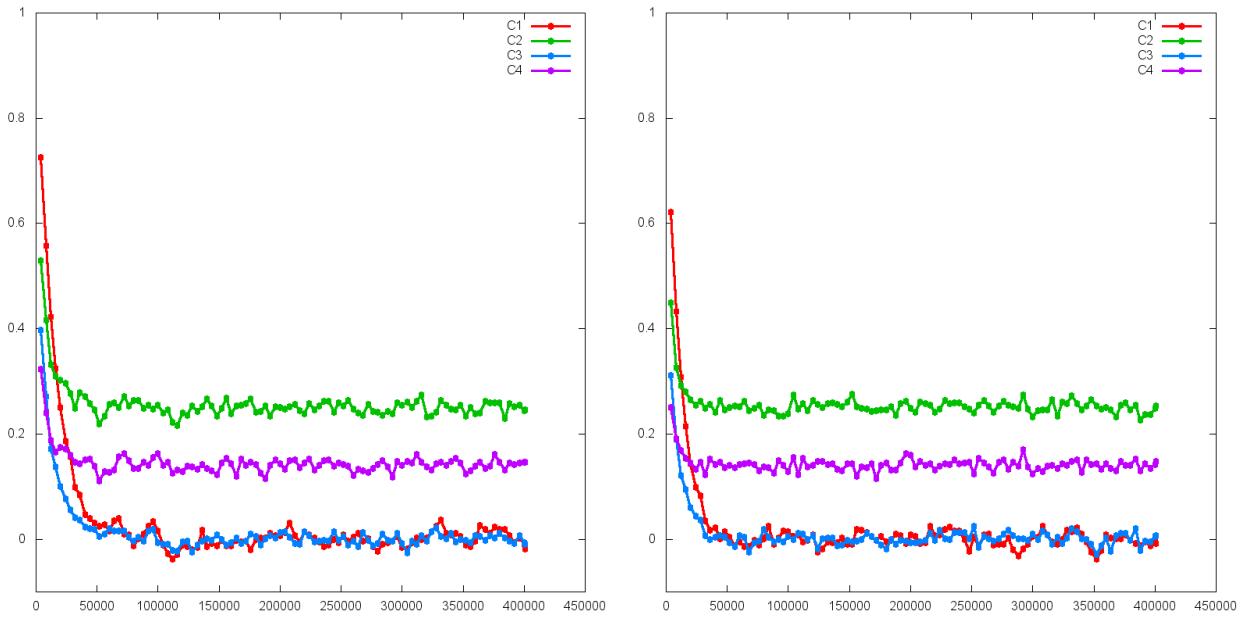


Figure 76: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 77: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

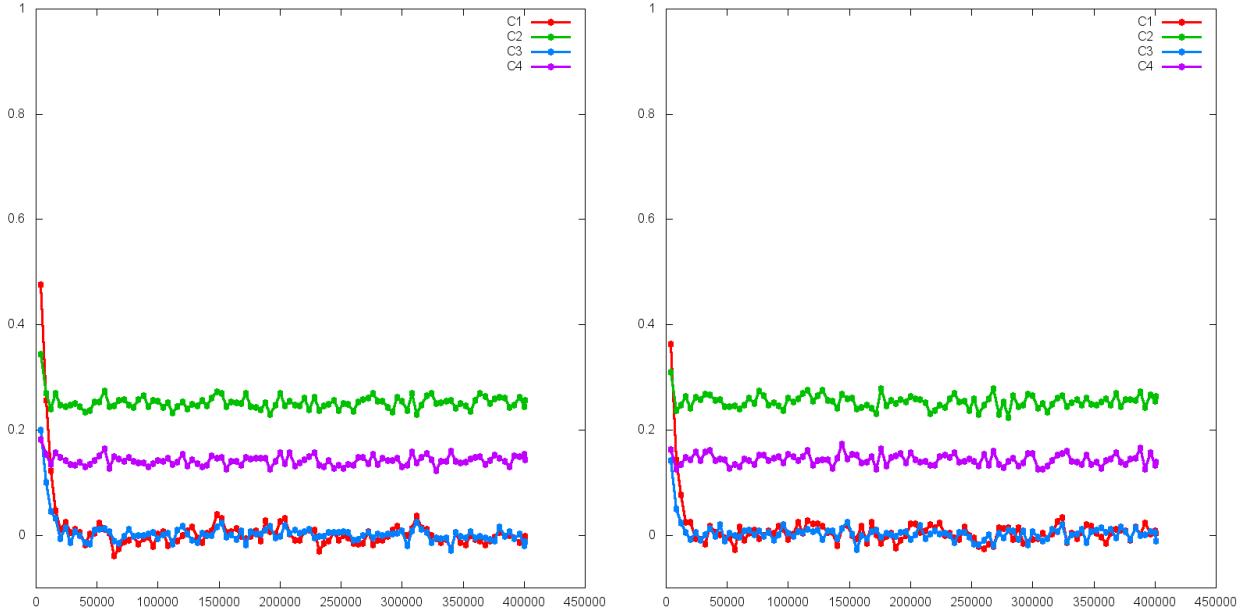


Figure 78: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 79: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

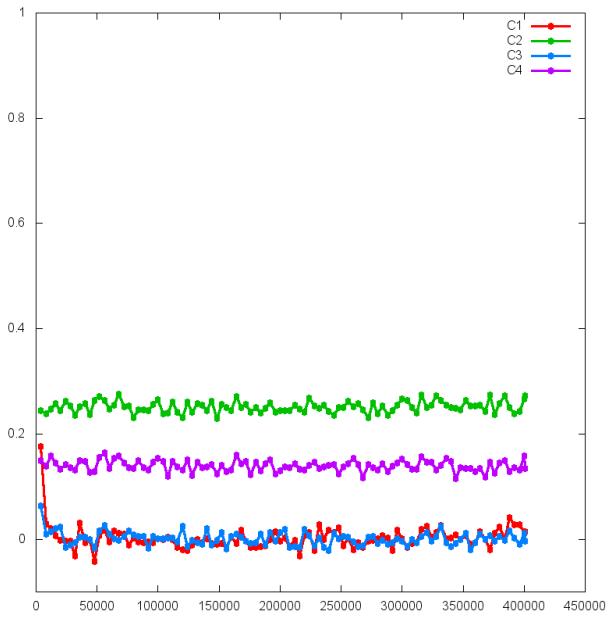


Figure 80: Snowman: Temp= 5.0,  $r$  = 0.637556,  $d$  = 1.0, pg

## 7 Contact Number

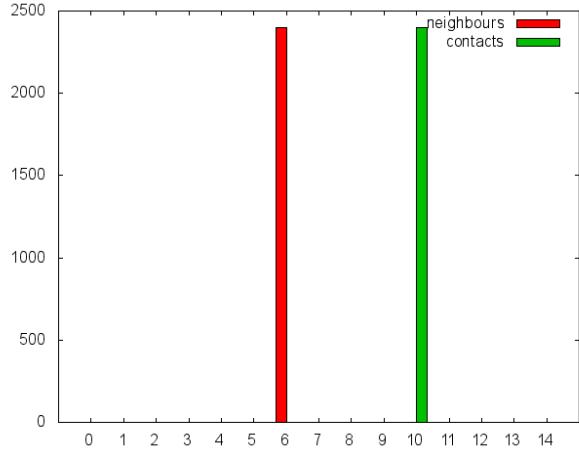


Figure 81: Snowman: Temp= 0.2,  $r$  = 0.637556,  $d$  = 1.0, pg

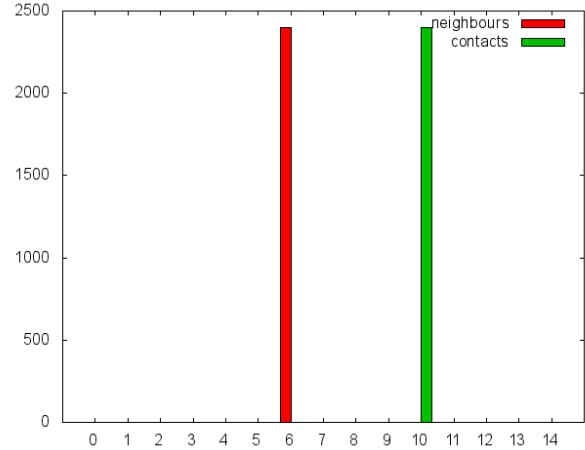


Figure 82: Snowman: Temp= 0.3,  $r$  = 0.637556,  $d$  = 1.0, pg

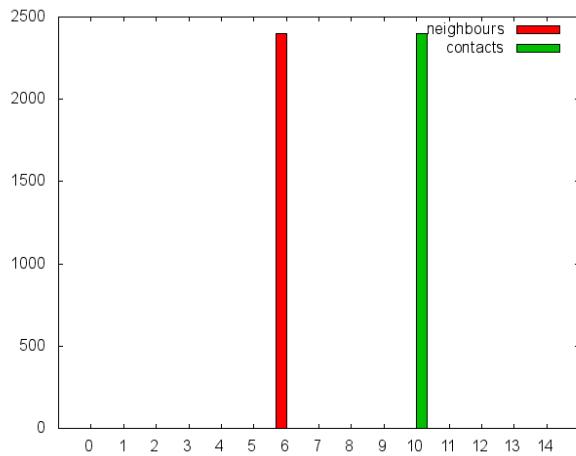


Figure 83: Snowman: Temp= 0.4,  $r = 0.637556$ ,  $d = 1.0$ , pg

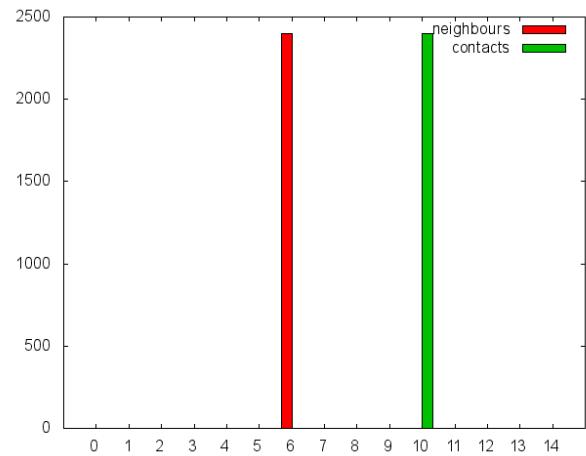


Figure 84: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

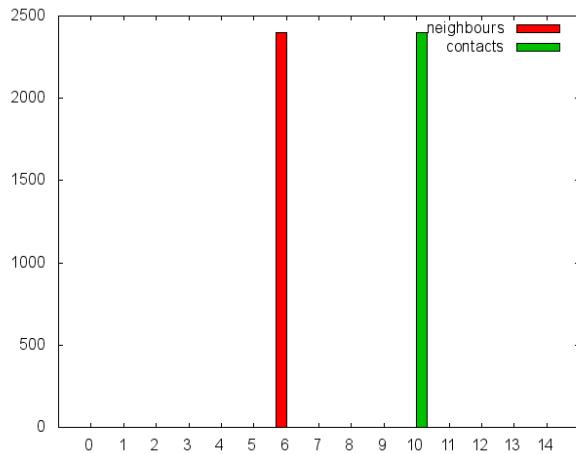


Figure 85: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg

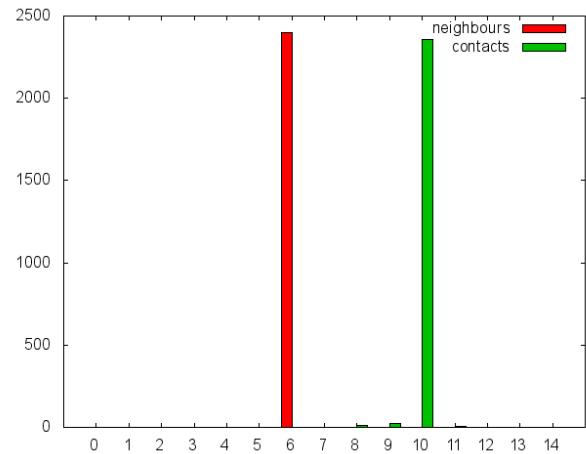


Figure 86: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

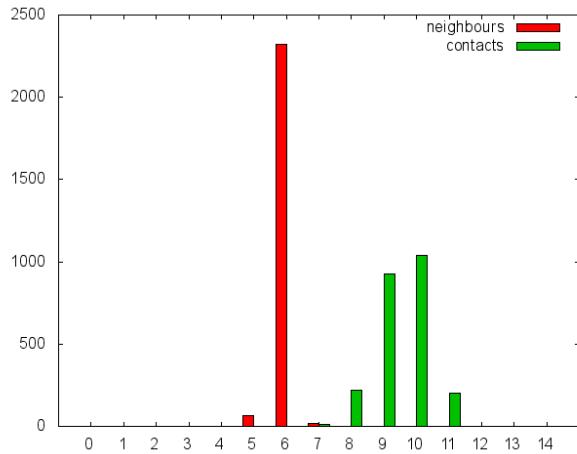


Figure 87: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

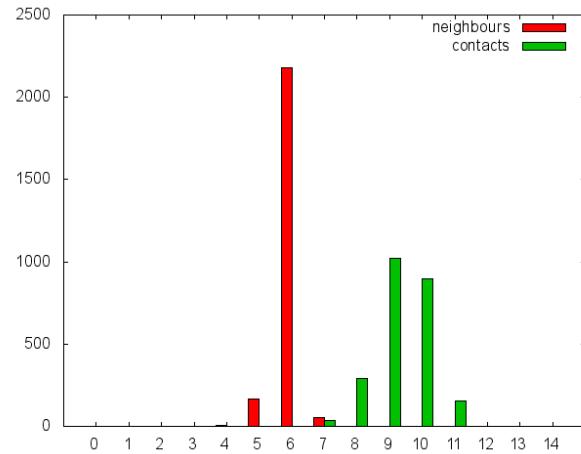


Figure 88: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

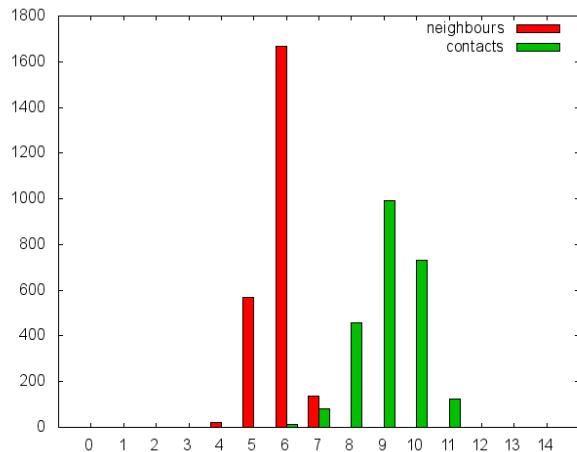


Figure 89: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

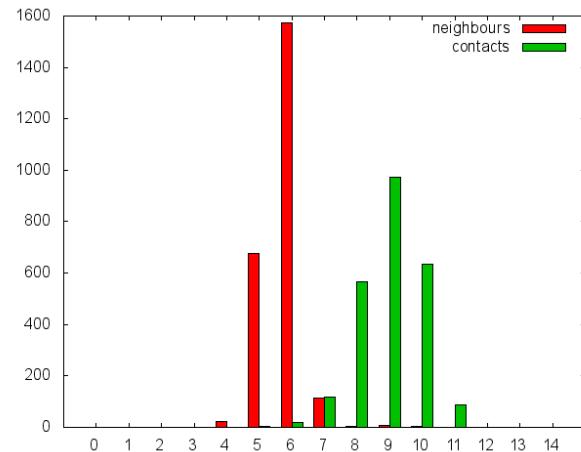


Figure 90: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

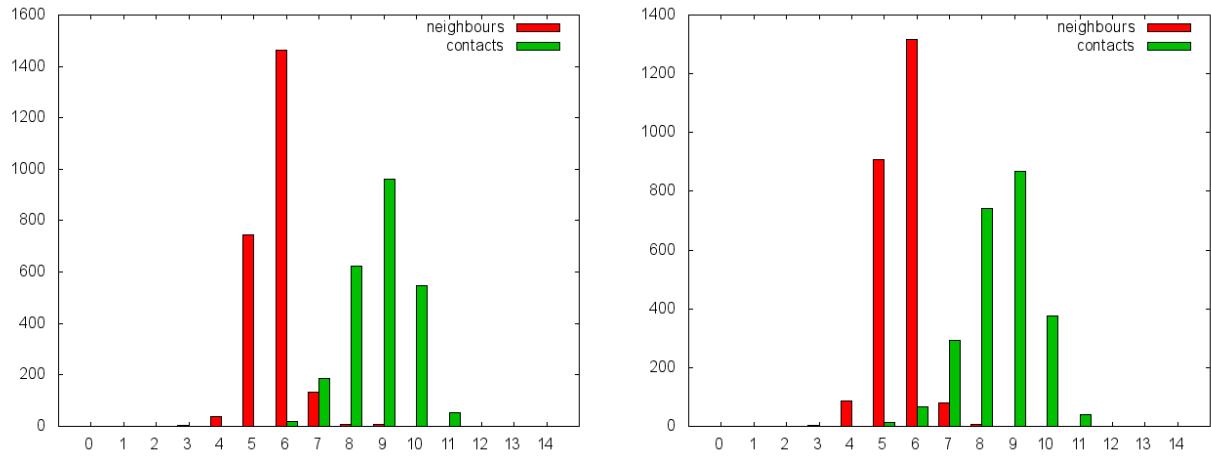


Figure 91: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg      Figure 92: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

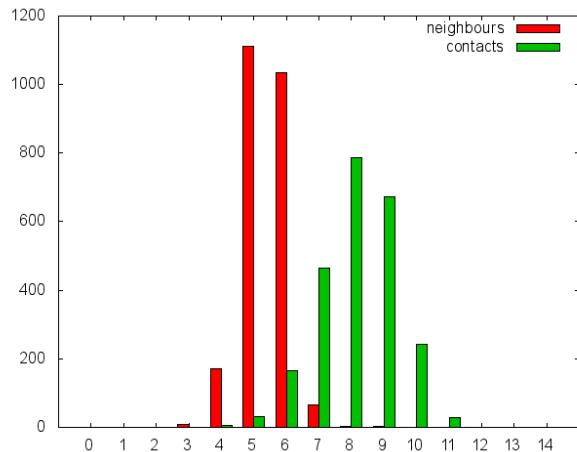


Figure 93: Snowman: Temp= 5.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

## 8 Properties

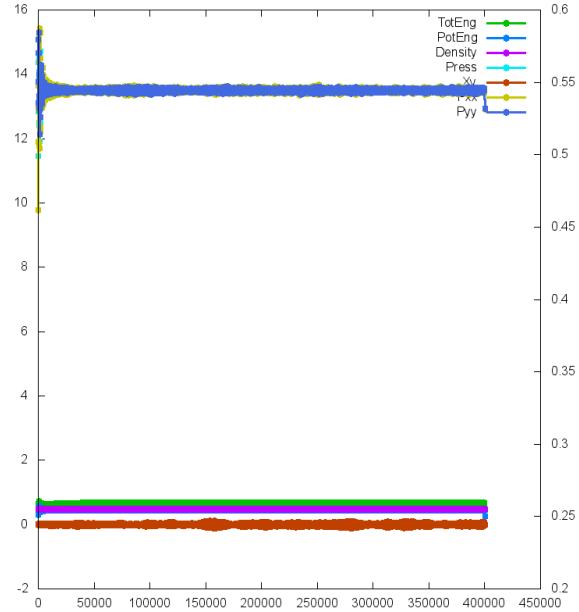


Figure 94: Snowman:  $\text{Temp} = 0.2$ ,  $r = 0.637556$ ,  $d = 1.0$ , pg

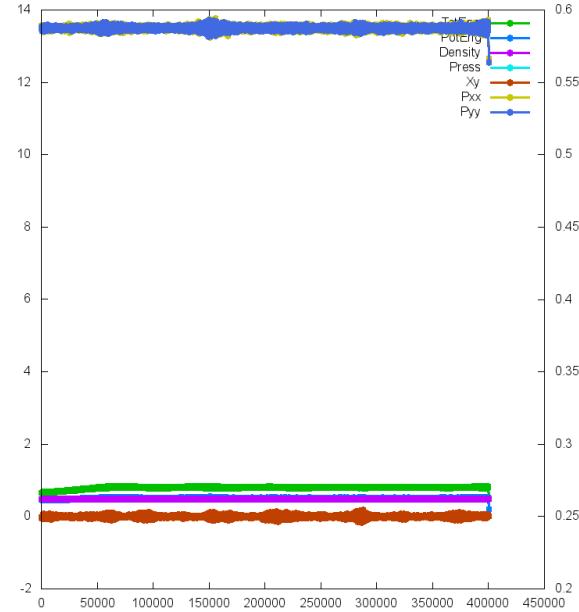


Figure 95: Snowman:  $\text{Temp} = 0.3$ ,  $r = 0.637556$ ,  $d = 1.0$ , pg

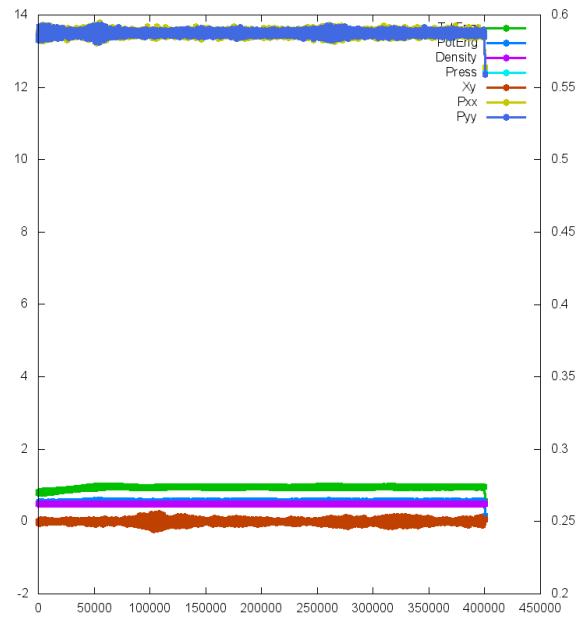


Figure 96: Snowman:  $\text{Temp} = 0.4$ ,  $r = 0.637556$ ,  $d = 1.0$ , pg

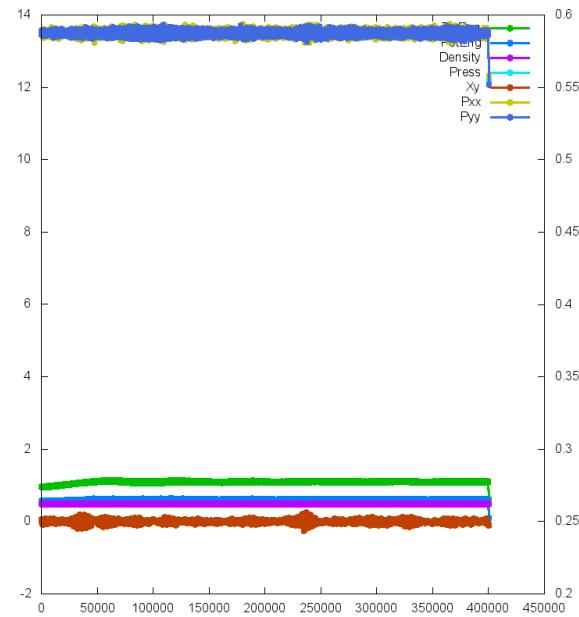


Figure 97: Snowman:  $\text{Temp} = 0.5$ ,  $r = 0.637556$ ,  $d = 1.0$ , pg

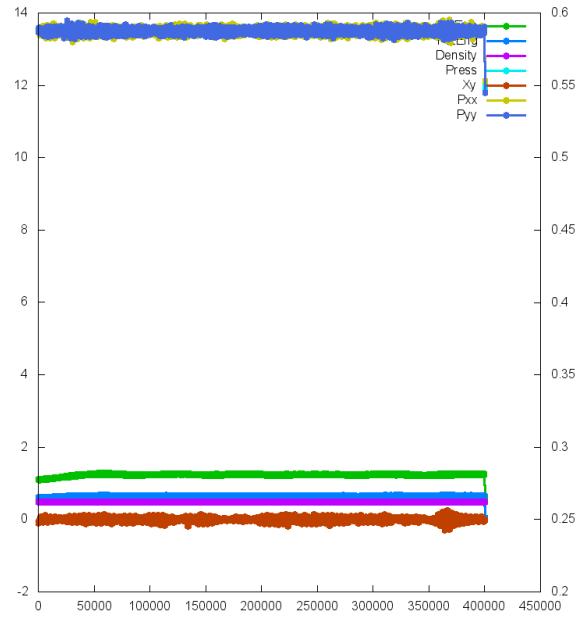


Figure 98: Snowman: Temp= 0.6,  $r = 0.637556$ ,  $d = 1.0$ , pg

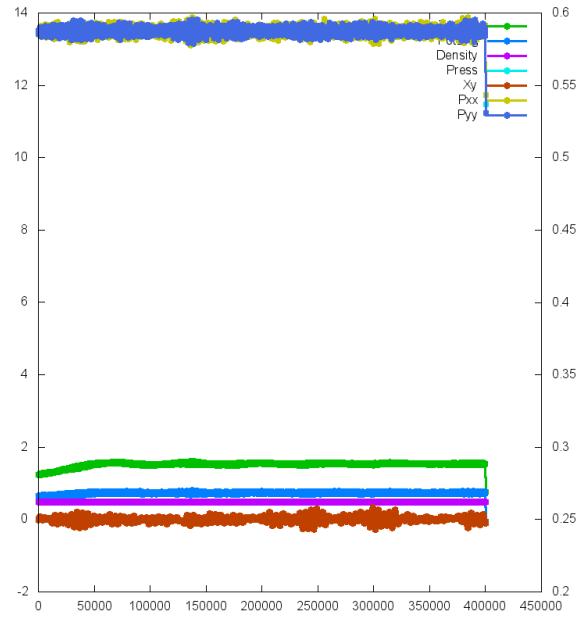


Figure 99: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

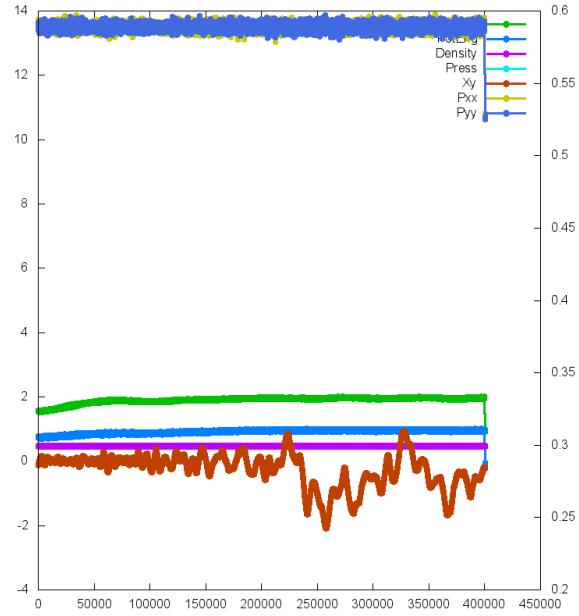


Figure 100: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

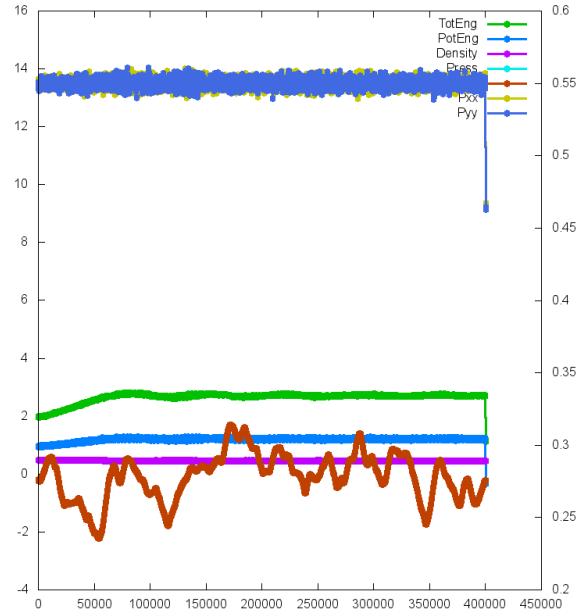


Figure 101: Snowman: Temp= 1.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

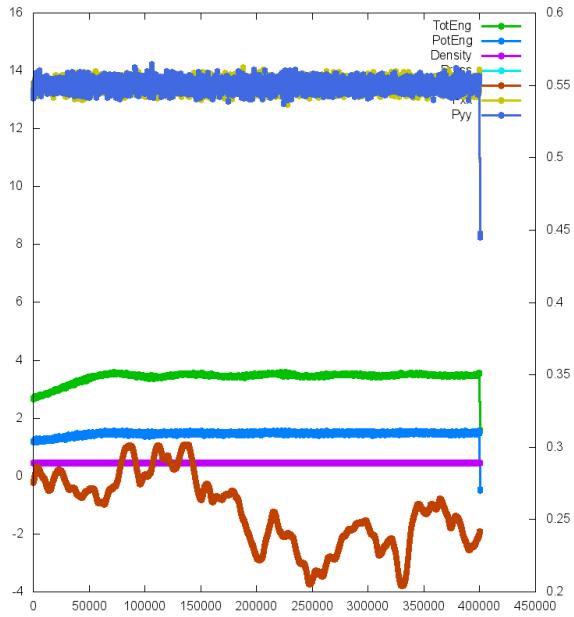


Figure 102: Snowman: Temp= 2.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

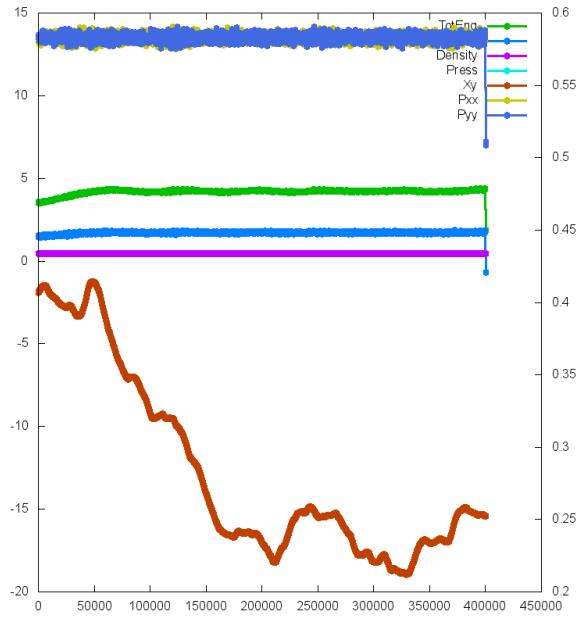


Figure 103: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

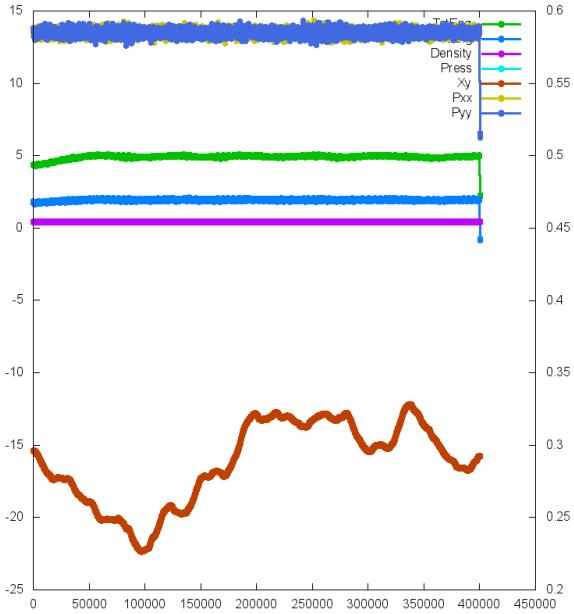


Figure 104: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

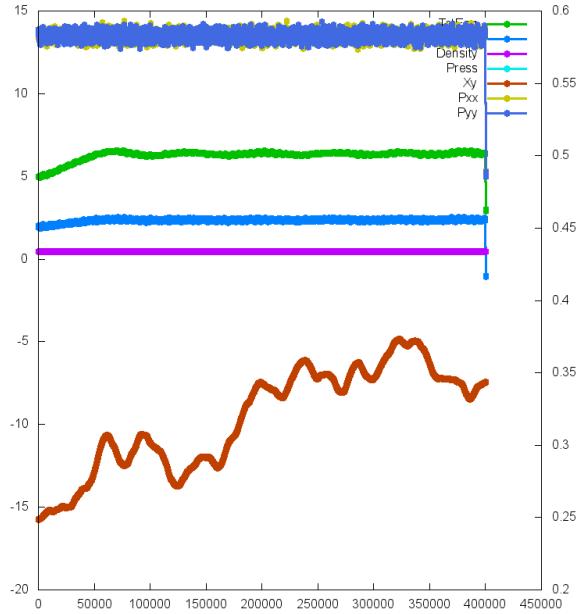


Figure 105: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

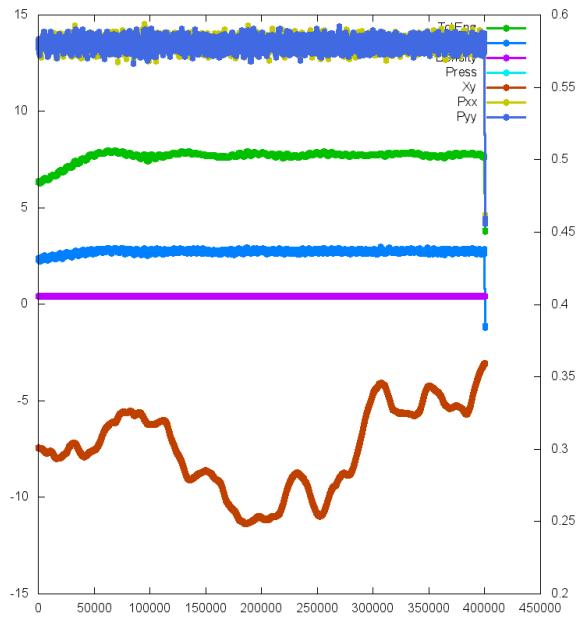


Figure 106: Snowman: Temp= 5.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

## 9 Data

C1 Relaxation	0	C1 Relaxation	0
C2 Relaxation	0	C2 Relaxation	0
C3 Relaxation	0	C3 Relaxation	0
C4 Relaxation	0	C4 Relaxation	0
Diffusion Constant	0.0001	Diffusion Constant	0.0004
Average bond fraction	0.9378	Average bond fraction	0.9390
Local Order	0.3722	Local Order	0.3717
Global Order	0.5291	Global Order	0.5287
Circle Order	0.0000	Circle Order	0.0000
contacts	1.0000	contacts	1.0000
neighbours	0.6000	neighbours	0.6000
pairing	0.1667	pairing	0.1667
Density	0.4841	Density	0.4829
Total Energy	0.4645	Total Energy	0.4976
Packing Fraction	0.9882	Packing Fraction	0.9856

Table 1: Snowman: Temp= 0.2,  $r = 0.637556$ , Table 2: Snowman: Temp= 0.3,  $r = 0.637556$ ,  $d = 1.0$ , pg

C1 Relaxation	0	C1 Relaxation	0
C2 Relaxation	0	C2 Relaxation	0
C3 Relaxation	0	C3 Relaxation	0
C4 Relaxation	0	C4 Relaxation	0
Diffusion Constant	0.0007	Diffusion Constant	0.0012
Average bond fraction	0.9398	Average bond fraction	0.9406
Local Order	0.3720	Local Order	0.3719
Global Order	0.5290	Global Order	0.5289
Circle Order	0.0000	Circle Order	0.0000
contacts	1.0000	contacts	1.0000
neighbours	0.6000	neighbours	0.6000
pairing	0.1667	pairing	0.1667
Density	0.4821	Density	0.4810
Total Energy	0.5641	Total Energy	0.6023
Packing Fraction	0.9840	Packing Fraction	0.9818

Table 3: Snowman: Temp= 0.4,  $r = 0.637556$ , Table 4: Snowman: Temp= 0.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

C1 Relaxation	0	C1 Relaxation	0
C2 Relaxation	0	C2 Relaxation	0
C3 Relaxation	0	C3 Relaxation	0
C4 Relaxation	0	C4 Relaxation	0
Diffusion Constant	0.0014	Diffusion Constant	0.0019
Average bond fraction	0.9417	Average bond fraction	0.9436
Local Order	0.3724	Local Order	0.3734
Global Order	0.5293	Global Order	0.5282
Circle Order	0.0000	Circle Order	0.0031
contacts	1.0000	contacts	0.9000
neighbours	0.6000	neighbours	0.6000
pairing	0.1667	pairing	0.1664
Density	0.4799	Density	0.4778
Total Energy	0.6438	Total Energy	0.7627
Packing Fraction	0.9795	Packing Fraction	0.9753

Table 5: Snowman: Temp= 0.6,  $r = 0.637556$ , Table 6: Snowman: Temp= 0.8,  $r = 0.637556$ ,  $d = 1.0$ , pg

C1 Relaxation	0	C1 Relaxation	0.249 687
C2 Relaxation	0	C2 Relaxation	0.169 787
C3 Relaxation	0	C3 Relaxation	0.209 737
C4 Relaxation	0.659 209	C4 Relaxation	0.1598
Diffusion Constant	0.0521	Diffusion Constant	0.1252
Average bond fraction	0.9411	Average bond fraction	0.9463
Local Order	0.4938	Local Order	0.5033
Global Order	0.5001	Global Order	0.5008
Circle Order	0.1906	Circle Order	0.1881
contacts	0.9000	contacts	0.9000
neighbours	0.5000	neighbours	0.5000
pairing	0.1588	pairing	0.1572
Density	0.4733	Density	0.4657
Total Energy	0.9418	Total Energy	1.1372
Packing Fraction	0.9661	Packing Fraction	0.9507

Table 7: Snowman: Temp= 1.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

C1 Relaxation	0.199 748	C1 Relaxation	0.139 824
C2 Relaxation	0.079 899 3	C2 Relaxation	0.079 899 3
C3 Relaxation	0.199 748	C3 Relaxation	0.089 886 7
C4 Relaxation	0.119 849	C4 Relaxation	0.059 924 5
Diffusion Constant	0.7822	Diffusion Constant	0.8245
Average bond fraction	0.9479	Average bond fraction	0.9529
Local Order	0.5187	Local Order	0.5104
Global Order	0.5000	Global Order	0.5002
Circle Order	0.1517	Circle Order	0.1421
contacts	0.9000	contacts	0.8000
neighbours	0.5000	neighbours	0.5000
pairing	0.1575	pairing	0.1557
Density	0.4592	Density	0.4517
Total Energy	1.5637	Total Energy	1.8485
Packing Fraction	0.9372	Packing Fraction	0.9220

Table 9: Snowman: Temp= 2.0,  $r = 0.637556$ , Table 10: Snowman: Temp= 2.5,  $r = 0.637556$ ,  $d = 1.0$ , pg

C1 Relaxation	0.099 873 9	C1 Relaxation	0.059 930 3
C2 Relaxation	0.029 962 2	C2 Relaxation	0.019 976 8
C3 Relaxation	0.049 937	C3 Relaxation	0.049 941 9
C4 Relaxation	0.029 962 2	C4 Relaxation	0.019 976 8
Diffusion Constant	0.8313	Diffusion Constant	0.8125
Average bond fraction	0.9562	Average bond fraction	0.9625
Local Order	0.5163	Local Order	0.5219
Global Order	0.5008	Global Order	0.5004
Circle Order	0.1283	Circle Order	0.1131
contacts	0.8000	contacts	0.8000
neighbours	0.5000	neighbours	0.5000
pairing	0.1544	pairing	0.1526
Density	0.4462	Density	0.4349
Total Energy	2.1872	Total Energy	2.9310
Packing Fraction	0.9108	Packing Fraction	0.8878

Table 11: Snowman: Temp= 3.0,  $r = 0.637556$ ,  $d = 1.0$ , pg Table 12: Snowman: Temp= 4.0,  $r = 0.637556$ ,  $d = 1.0$ , pg

C1 Relaxation	0.049 938 6
C2 Relaxation	0.009 987 72
C3 Relaxation	0.059 926 3
C4 Relaxation	0.019 975 4
Diffusion Constant	0.8331
Average bond fraction	0.9654
Local Order	0.5131
Global Order	0.5001
Circle Order	0.0858
contacts	0.8000
neighbours	0.5000
pairing	0.1504
Density	0.4246
Total Energy	3.7864
Packing Fraction	0.8666

Table 13: Snowman: Temp= 5.0,  $r = 0.637556$ ,  $d = 1.0$ , pg