

# DISK PACKING PROBLEM - TESTING (Normal Model)

Algorithm's details: MaxSearch = 1000, MaxNoImprove = 100, MaxError respect Packomania:  $10^{-4}$

Machine's details: Amazon Ec2 m2.xlarge with Debian, 4 core and 16 GB of memory

Solver: KNITRO

#	Amount Disks
1	25
2	50
3	75
4	100
5	125
6	135
7	145

## Statistics of #10 RUN with N = 25

#	Elapsed time	Local optimizations	Objective Radius
1	3,000	44	0,099999878149
2	6,000	92	0,099999999009
3	2,000	31	0,099999957210
4	0,000	8	0,099999999880
5	1,000	15	0,099999995031
6	7,000	111	0,099999999774
7	1,000	23	0,099999999905
8	2,000	20	0,099999999839
9	2,000	28	0,099999853439
10	1,000	17	0,099999783833
AVG	2,500	38,900	0,099999946607

## Statistics of #10 RUN with N = 50

#	Elapsed time	Local optimizations	Objective Radius
1	54,000	125	0,071291074619
2	19,000	44	0,071350649153
3	13,000	29	0,071350660581
4	8,000	16	0,071307892058
5	1,000	1	0,071350658148
6	3,000	6	0,071321641405
7	15,000	32	0,071290005064
8	13,000	31	0,071350641483
9	14,000	34	0,071307957283
10	72,000	172	0,071321776542
AVG	21,200	49,000	0,071324295634

### Statistics of #10 RUN with N = 75

#	Elapsed time	Local optimizations	Objective Radius
1	141,000	113	0,058398908368
2	19,000	16	0,058465862356
3	68,000	56	0,058411085378
4	307,000	267	0,058400562049
5	149,000	125	0,058405988870
6	37,000	32	0,058445086976
7	75,000	63	0,058394867817
8	129,000	113	0,058400076586
9	16,000	11	0,058481619988
10	81,000	66	0,058444938901
AVG	102,200	86,200	0,058424899729

### Statistics of #10 RUN with N = 100

	Elapsed time	Local optimizations	Objective Radius
1	384,000	128	0,051398153522
2	93,000	18	0,051397086428
3	836,000	98	0,051398400444
4	295,000	94	0,051398496388
5	295,000	102	0,051397912386
6	822,000	217	0,051396344106
7	769,000	167	0,051390836660
8	120,000	50	0,051391267480
9	57,000	24	0,051331356201
10	46,000	22	0,051397083531
AVG	371,700	92,000	0,051389693715

### Statistics of #10 RUN with N = 125

#	Elapsed time	Local optimizations	Objective Radius
1	617,000	130	0,045893341010
2	201,000	26	0,045892690492
3	223,000	37	0,045911282735
4	913,000	182	0,045891022981
5	105,000	22	0,045895849982
6	158,000	33	0,045892478494
7	221,000	46	0,045910843437
8	669,000	144	0,045883449951
9	120,000	11	0,045921326530
10	1.604,000	324	0,045905927635
AVG	483,100	95,500	0,045899821325

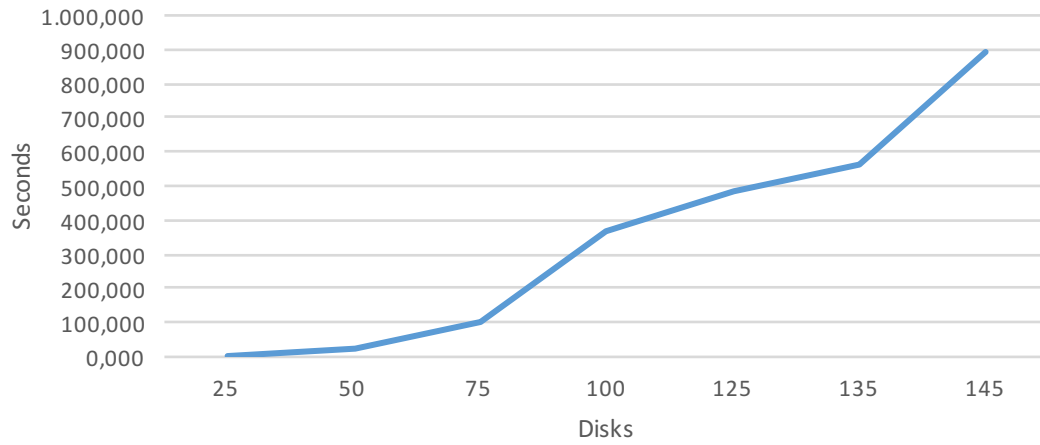
### Statistics of #10 RUN with N = 135

#	Elapsed time	Local optimizations	Objective Radius
1	531,000	81	0,044348071899
2	65,000	11	0,044358957035
3	44,000	8	0,044346798816
4	355,000	66	0,044350266489
5	883,000	143	0,044334257730
6	157,000	24	0,044360818786
7	252,000	41	0,044361726603
8	805,000	135	0,044335457936
9	350,000	51	0,044341681076
10	2.226,000	360	0,044333971080
AVG	566,800	92,000	0,044347200745

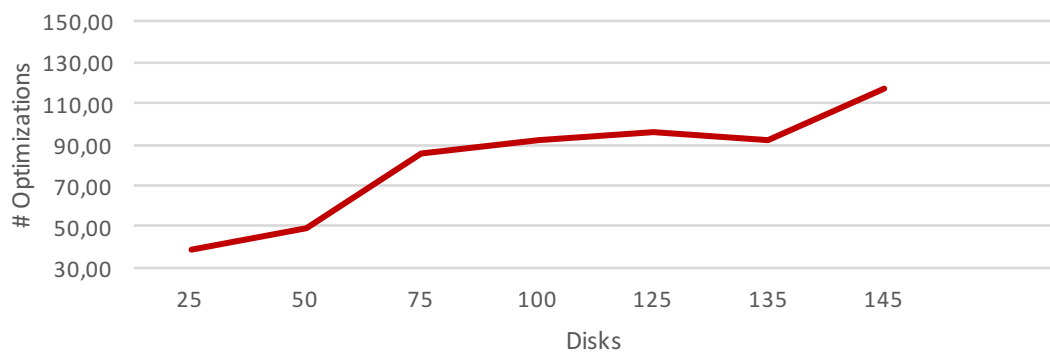
### Statistics of #10 RUN with N = 145

#	Elapsed time	Local optimizations	Objective Radius
1	170,000	22,000	0,042805063304
2	841,000	116,000	0,042777238734
3	2.311,000	306,000	0,042779757174
4	1.376,000	183,000	0,042777969334
5	466,000	56,000	0,042803922104
6	453,000	60,000	0,042869385658
7	835,000	107,000	0,042797334446
8	585,000	73,000	0,042776950572
9	1.631,000	217,000	0,042871353350
10	262,000	31,000	0,042816418088
AVG	893,000	117,100	0,042807539276

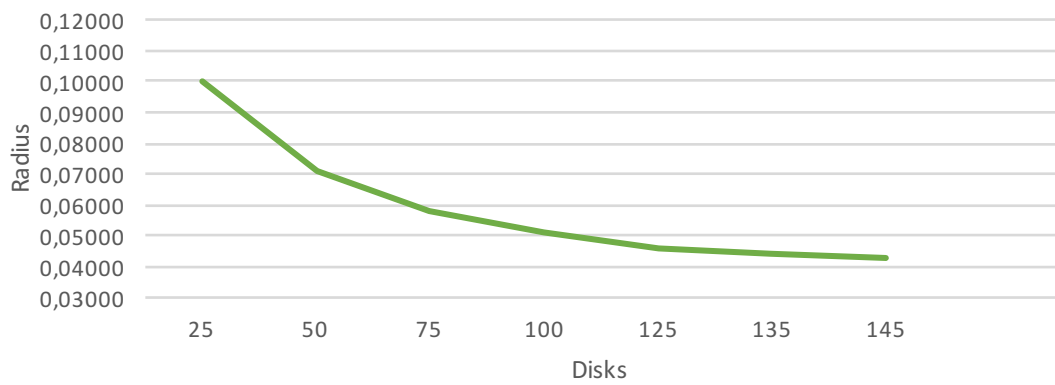
Elapsed Time Average of 10 runs for each N



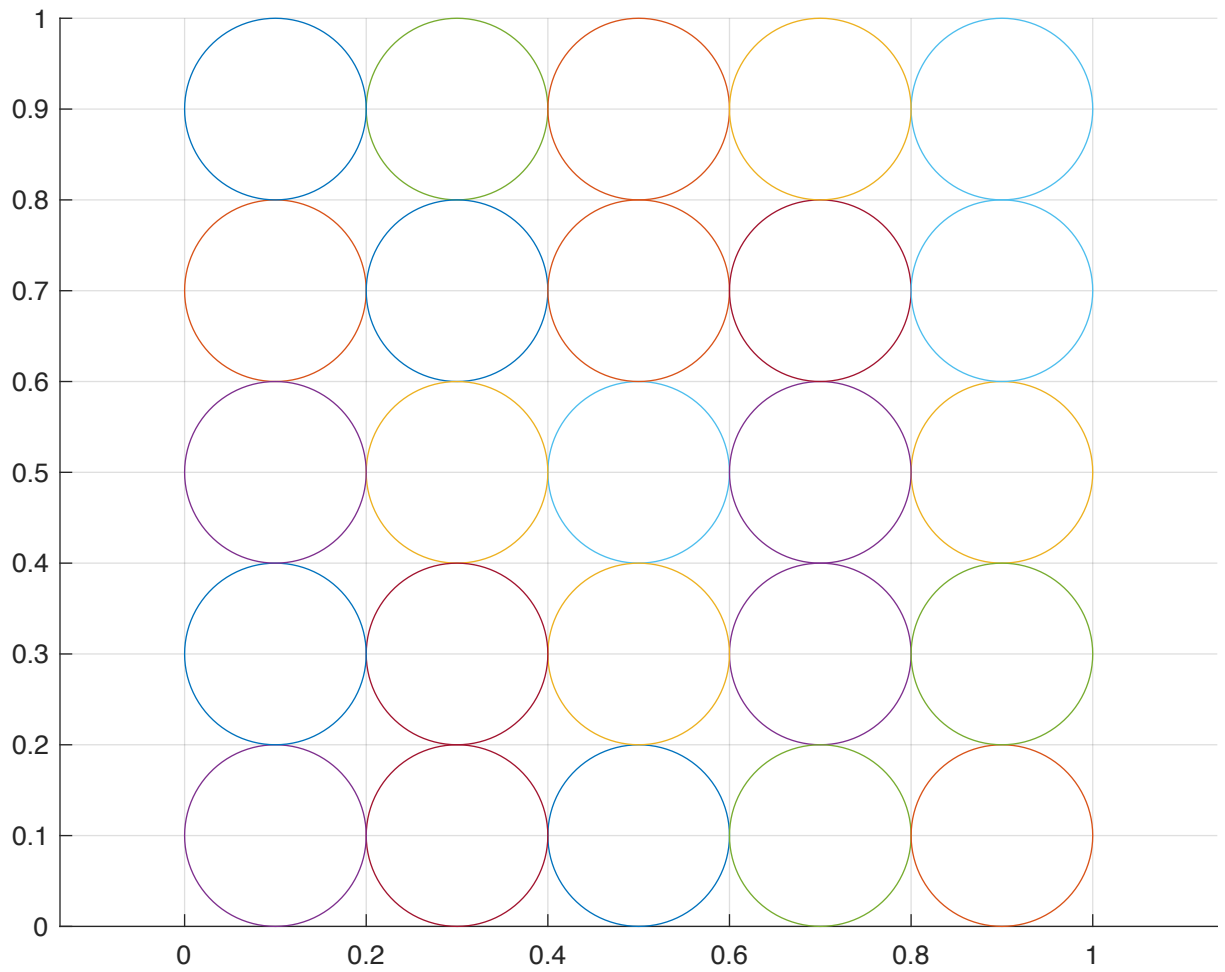
Local Optimizations Average of 10 runs for each N



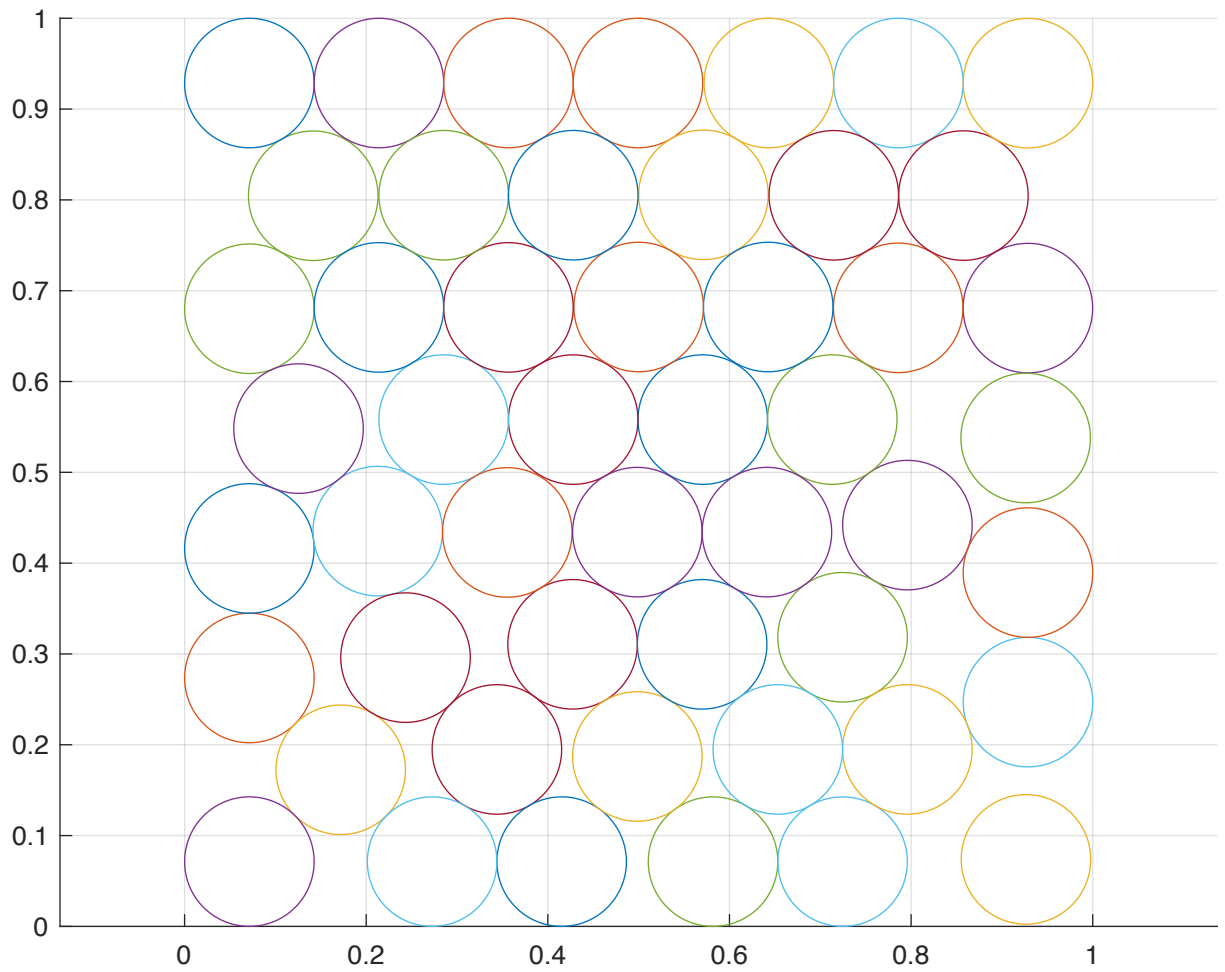
Objective Radius Average of 10 runs for each N



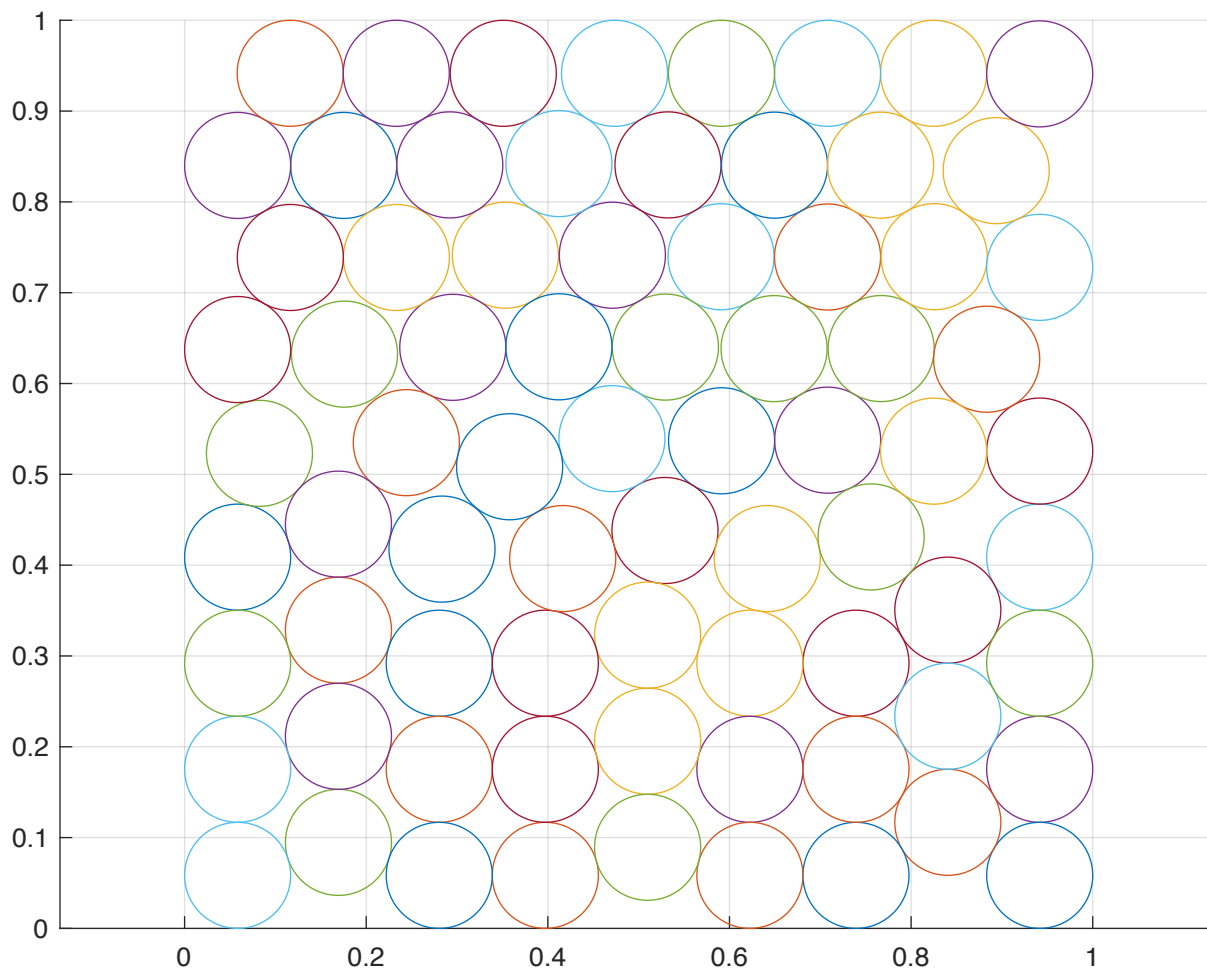
## N = 25 - NORMAL MODEL



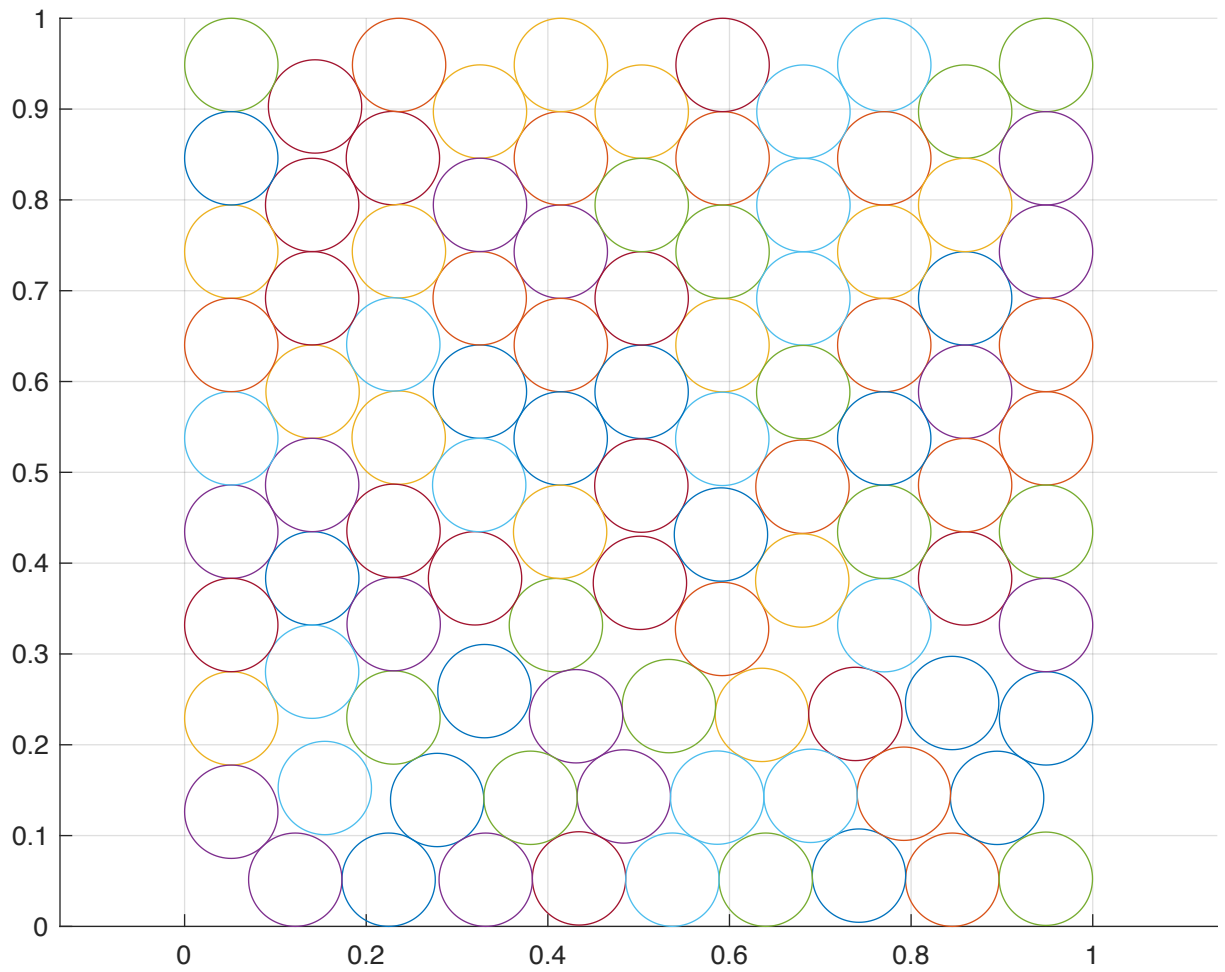
## N = 50 - NORMAL MODEL



## N = 75 - NORMAL MODEL

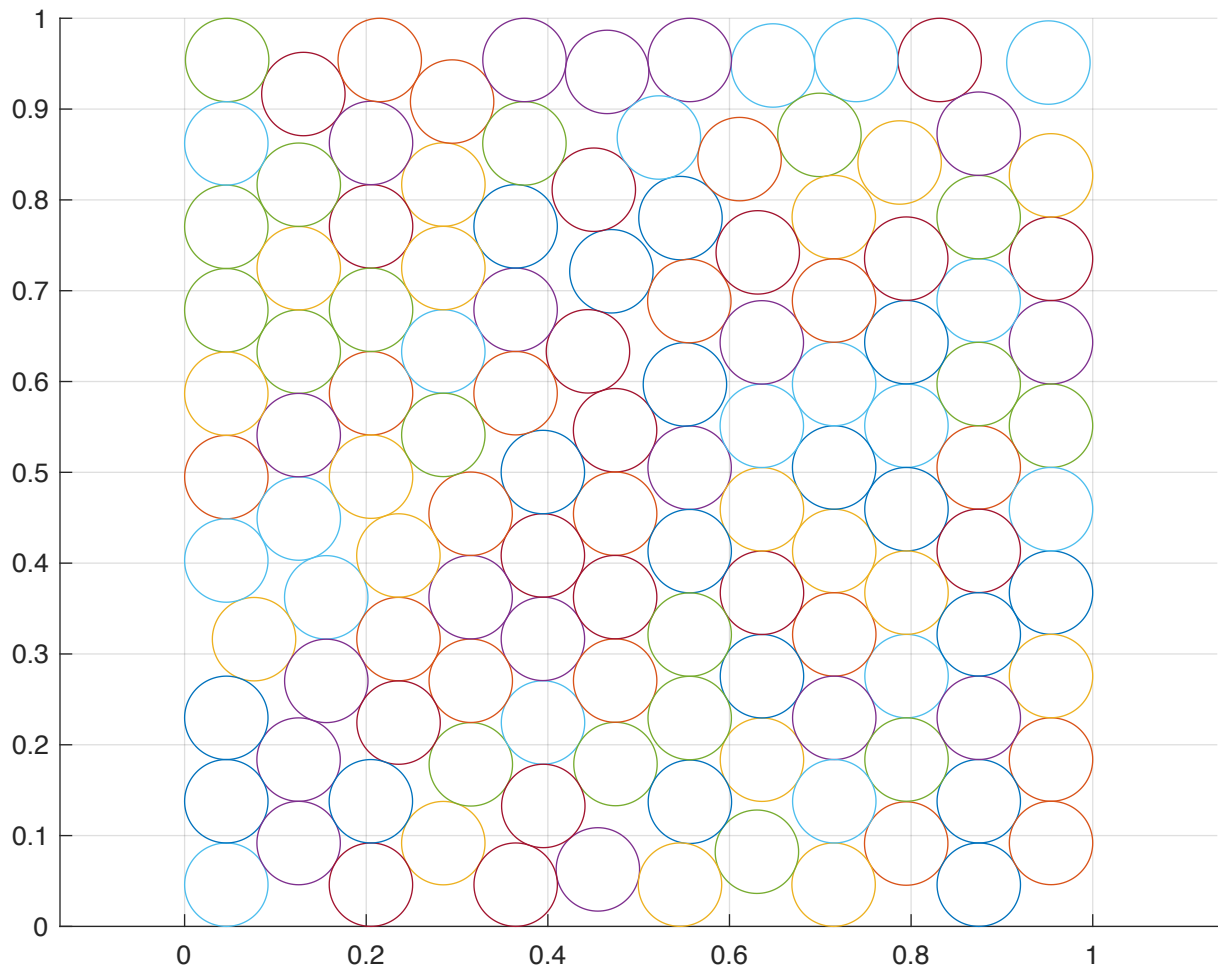


## N = 100 - NORMAL MODEL

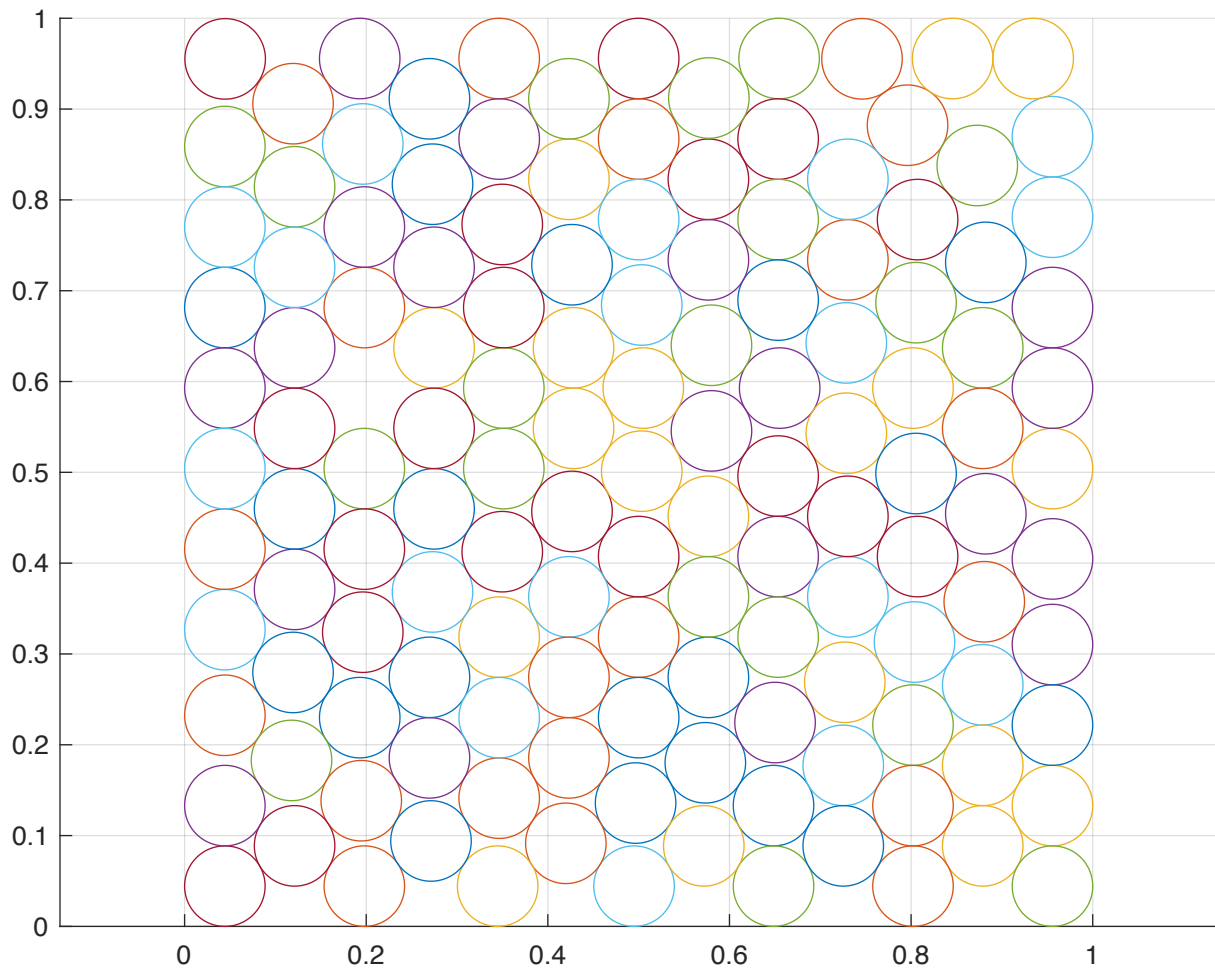




## N = 125 - NORMAL MODEL



## N = 135 - NORMAL MODEL



## N = 145 - NORMAL MODEL

