Active and passive diffusion processes

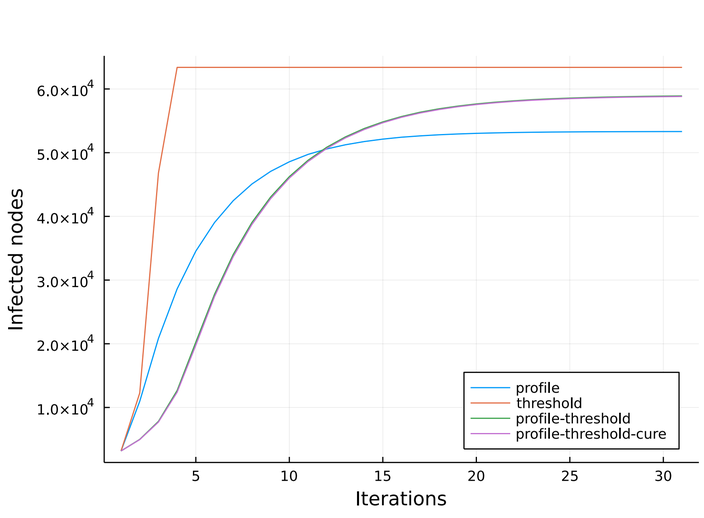
Models:
- Threshold – passive adoption based on the percentage of adopted neighbours
- Profile – active adoption based on own preferences, and a chance for getting immunized
- Profile-Threshold – mixed behaviour of Threshold and Profile
- Profile-Threshold-Cure – additionally, a node can become spontaneously uninfected (cured)

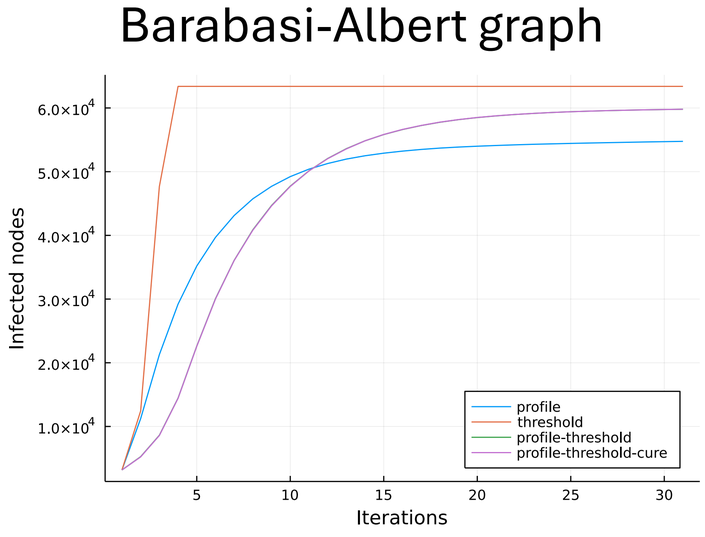
Additional Influence:
- Spontaneous adoption – adoption with a fixed probability

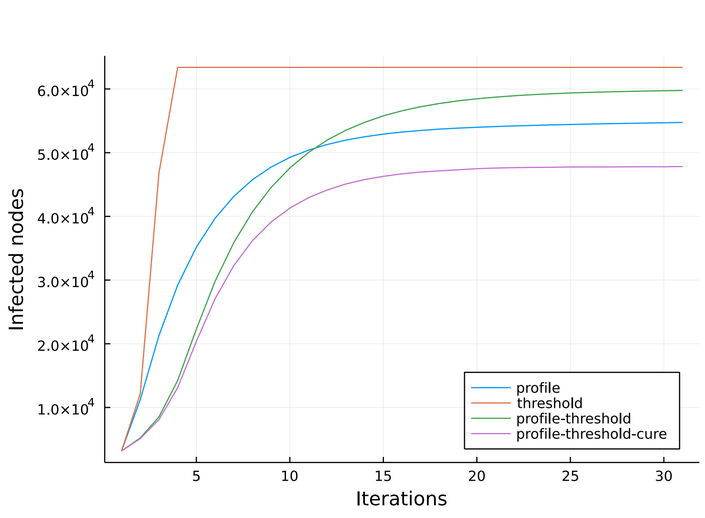
Graphs:
- Barabasi-Albert with n=63392, m=13
- Erdos-Renyi with n=63392, p=0.0004
- Watts-Strogatz with n=63392, k=13, p=0.01

Parameters:
- T – threshold
- P – profile
- I – immunization probability
- S – spontaneous adoption probability
- C – cure probability

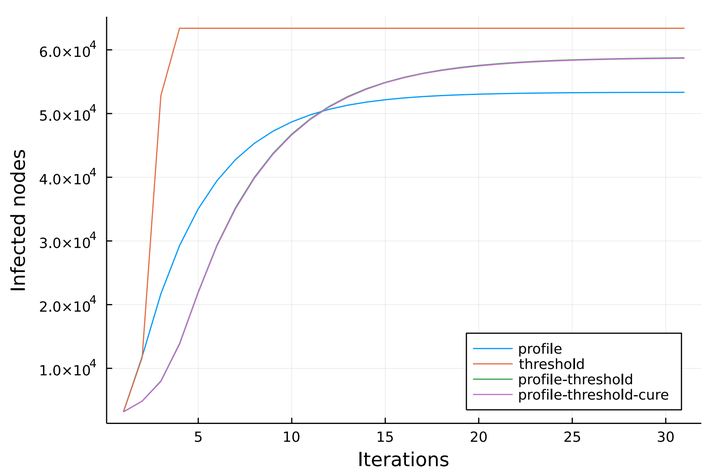
Barabasi-Albert graph

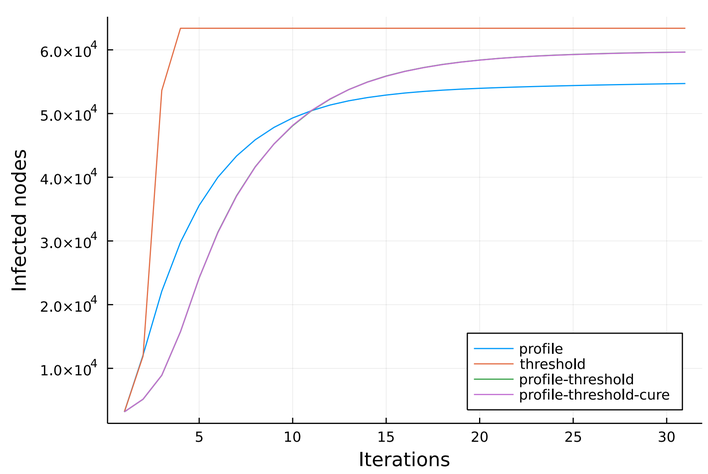


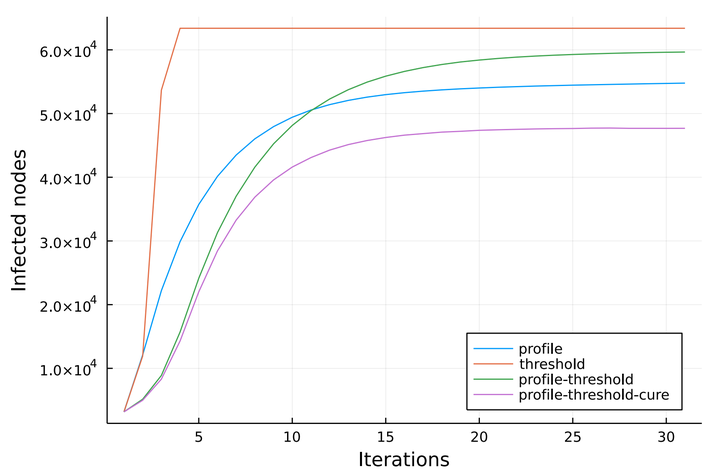




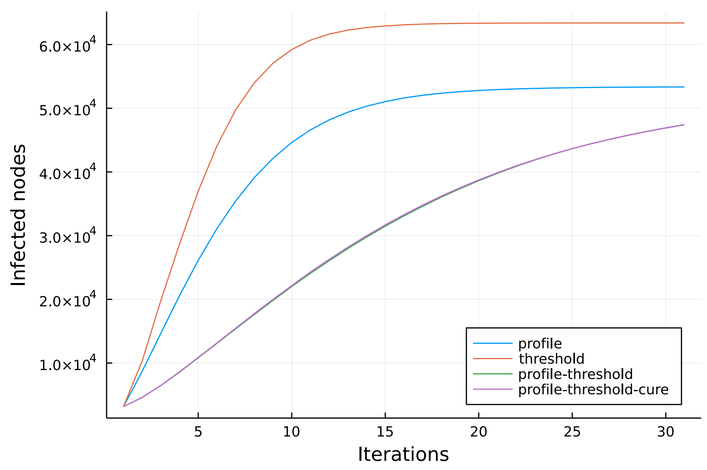
Erdos-Renyi graph

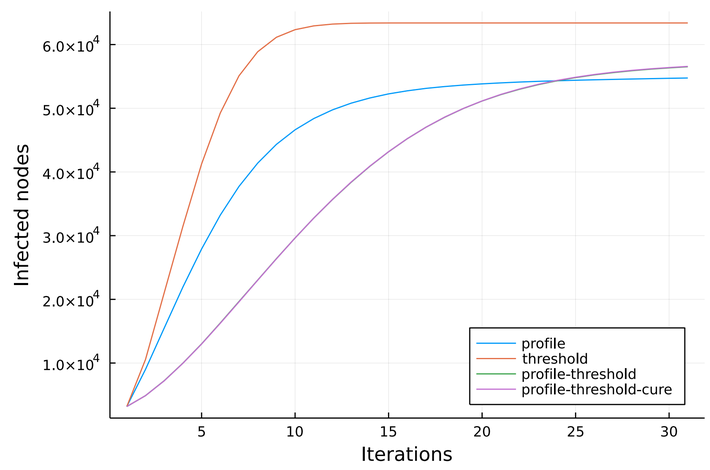


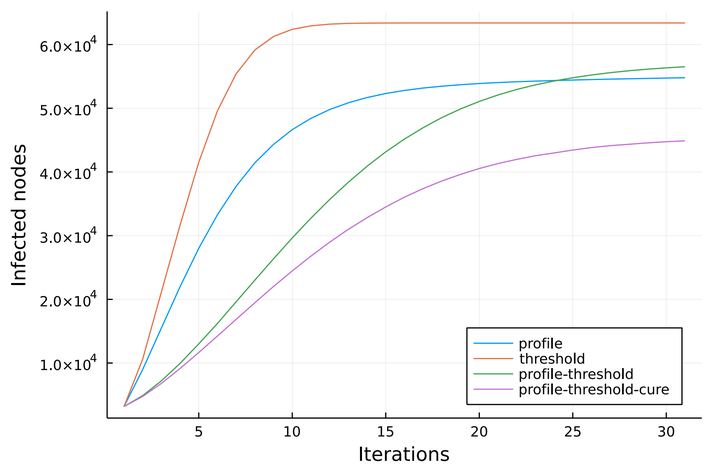




Watts-Strogatz graph







Parameter set 1:
T=0.1, P=0.8, I=0.05, S=0, C=0

Parameter set 2:
T=0.1, P=0.8, I=0.05, S=0.005, C=0

Parameter set 3:
T=0.1, P=0.8, I=0.05, S=0.005, C=0.05