Particle Models

October 23, 2019

1 Model Implementation

The main difficulty in moving from the space homogenous to the two dimensional case is calculating the heterogeneity for every particle.

The problem term is:

$$G\left(\frac{\frac{1}{N}\sum_{j=1}^{N} v_t^{j,N}\varphi(x_t^{j,N}-x_t^{i,N})}{\frac{1}{N}\sum_{j=1}^{N}\varphi(x_t^{j,N}-x_t^{i,N})}\right).$$

Let's unpack this term by term, and discuss their implementation.

1.1 Differences in Garnier's Model

Weighting interaction by N instead of N_i, length of space domain is 10, not 2π.

2 Garnier Figure Reproduction