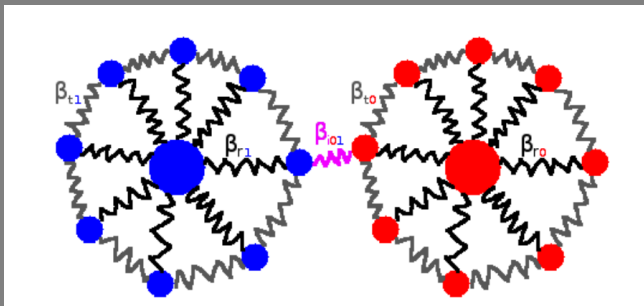


Superboids

L G Brunnet

Instituto de Física - UFRGS

September, 2011



$\vec{x}^c \rightarrow$ central particle;

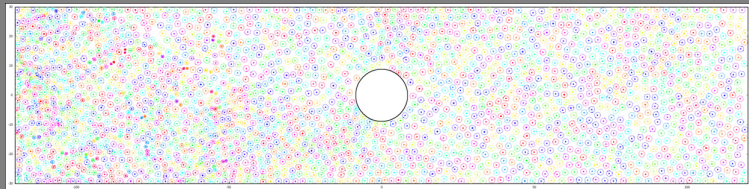
$\vec{x}^p \rightarrow$ peripheral particle

$$\vec{x}^c = \vec{x}^c + \vec{v}^c \Delta t$$

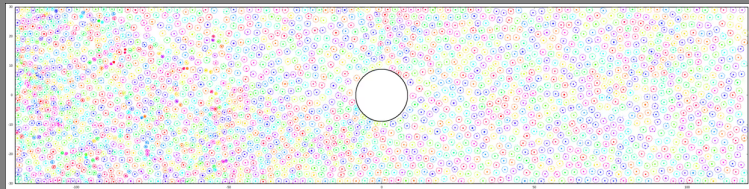
$$\vec{x}^p = \vec{x}^p + \vec{v}^p \Delta t$$

$$\theta_i^c = \arg[\alpha^{intra} \sum_{j=1}^n \vec{v}_j + \beta^{intra} \sum_{j=1}^n \vec{f}_{i,j} + \eta \vec{u}],$$

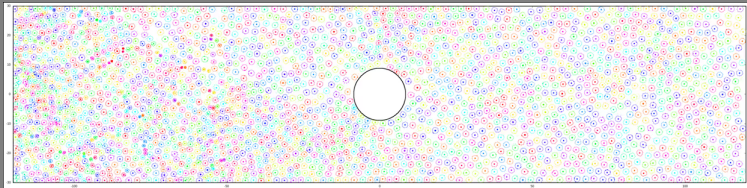
$$\theta_j^p = \arg[\alpha^{intra} \sum_{l \in \mathcal{V}} \vec{v}_l^i + \alpha^{inter} \sum_{k \in \mathcal{V}} \vec{v}_j^k + \beta^{intra} \sum_{l=j-1, j+1, c} \vec{f}_{j,l} + \beta^{inter} \sum_{j \in \mathcal{V}} \vec{f}_{i,k} + \eta \vec{u}]$$



$$\alpha^{intra,inter} = 11; \beta^{inter} = 0.1$$



$$\alpha^{intra,inter} = 11; \beta_{inter} = 0.5$$



$$\alpha^{intra,inter} = 10.5; \beta^{inter} = 0.5$$