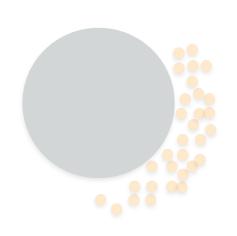
## BEHAVIOUR FLUID - SOLID IN THE NANOSCALE

## KAWASAKI-GUNTON PROJECTION OPERATOR



## MARKOVIAN APPROXIMATION



$$\partial_{t}\rho(\mathbf{r}) = -\nabla \cdot \mathbf{g}(\mathbf{r})$$

$$\partial_{t}\mathbf{g}(\mathbf{r}) = -\nabla \cdot (\mathbf{g}(\mathbf{r})\mathbf{v}(\mathbf{r})) - \rho(\mathbf{r})\nabla \frac{\delta \mathcal{F}}{\delta \rho(\mathbf{r})}[\rho, \mathbf{R}]$$

$$+ \nabla \cdot \mathbf{\Sigma}(\mathbf{r}) + \mathcal{S}(\mathbf{r})$$

$$\dot{\mathbf{R}} = \frac{\mathbf{P}}{M}$$

$$\dot{\mathbf{P}} = -\frac{\partial \mathcal{F}}{\partial \mathbf{R}} - \int d\mathbf{r} \mathcal{S}(\mathbf{r})$$

## **MORI THEORY**

$$C(t) = \exp\{-\Lambda^* t\} \cdot C(0)$$

MD SIMULATIONS

SLIP BOUNDARY CONDITION

