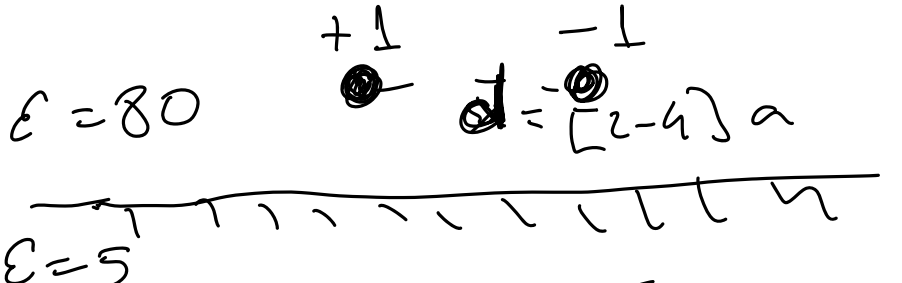
or two walls

All deterministic tests turn off noise $k_B T = 0$



F_1 $-F_1$ — Electrostatic MATLAB both 1 & 2 walls

100% dry, 1 step only Δt

$$M = \begin{bmatrix} \frac{A_{3\times3}}{6\pi a\eta} & \frac{A_{3\times3}}{6\pi a\eta} \end{bmatrix} = \frac{1}{6\pi a\eta} I_{6\times6}$$

$$v = MF$$

$$\Delta q = MF\Delta t$$

Verify F electrostat

100% wet same system

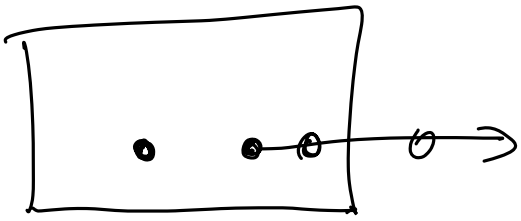
$$M = \begin{bmatrix} \text{matrix we know} \\ \text{from DP Stokes paper} \\ \text{or use C++/python GPU} \end{bmatrix}$$

one wall & two walls

Verifies code by hydrodynamics

$$\Delta q = MF\Delta t$$

Then bring particles to overlap wall $h = 1a$ and test that, shift in xy plane to test periodics



should be same

Then 50% dry 50% wet

$$\mu = \frac{1}{2}\mu_{dry} + \frac{1}{2}\mu_{wet}$$

test again

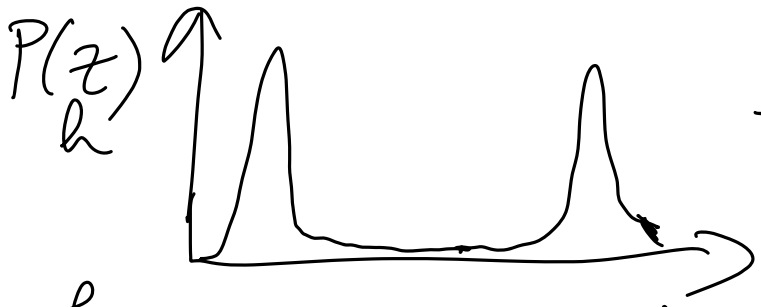
$$\Delta q = \mu F \Delta t$$

Next test: Do actual BD

Compare
100% wet
100% dry
50-50

same result

against previous results



static observable

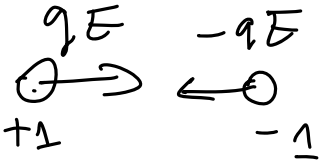
Theorem: Eq. dist. is independent of dynamics

Test Electric field

deterministically using 100% dry

Try metallic as well

Put charge on walls (use MATLAB)



Repeat test #1 with E on