

Project 6) Brownian Motion

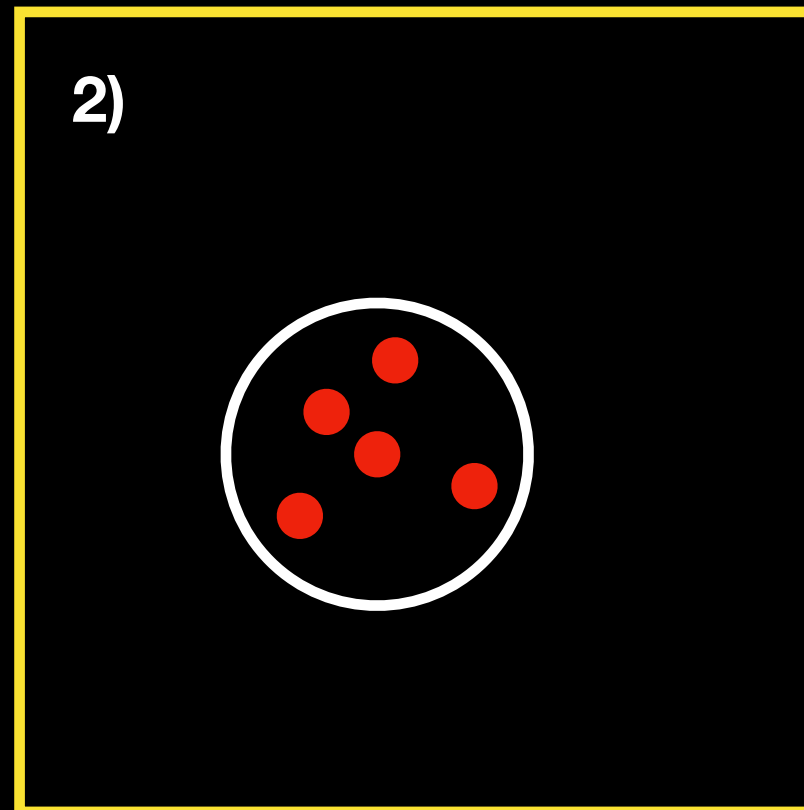
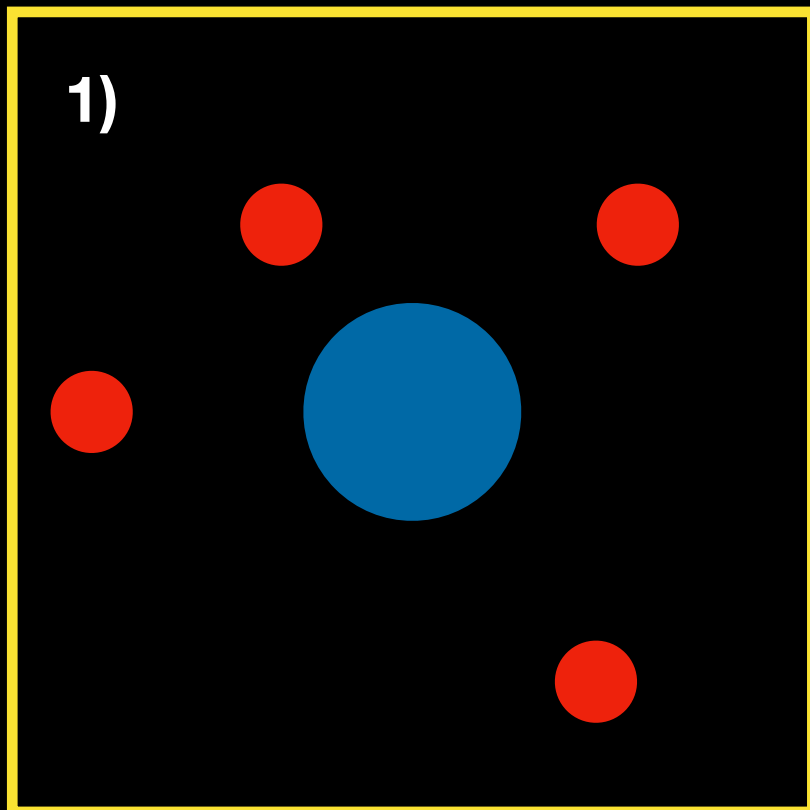
Study the motion of one big heavy particle in a bath of small particles.

For this, measure the mean square displacement of the big particle as a function of time.

For advanced students:

You should place your big particle at the beginning of your simulation in the center of your box. However, you may not want to start your measurement immediately, as the system should first forget the initial conditions you chose. This means your measurement should work with a flexible starting position of the big particle. You should average over many realizations of the experiment!

Does the result change if you place the small particles inside the big particle? The big particle is still heavier than the small particles & small particles perform elastic collisions with each other and with the perimeter of the big particle.



Note: It is not necessary, that one and the same code does everything. You can write several codes, which do one specific measurement.