Exercise 6
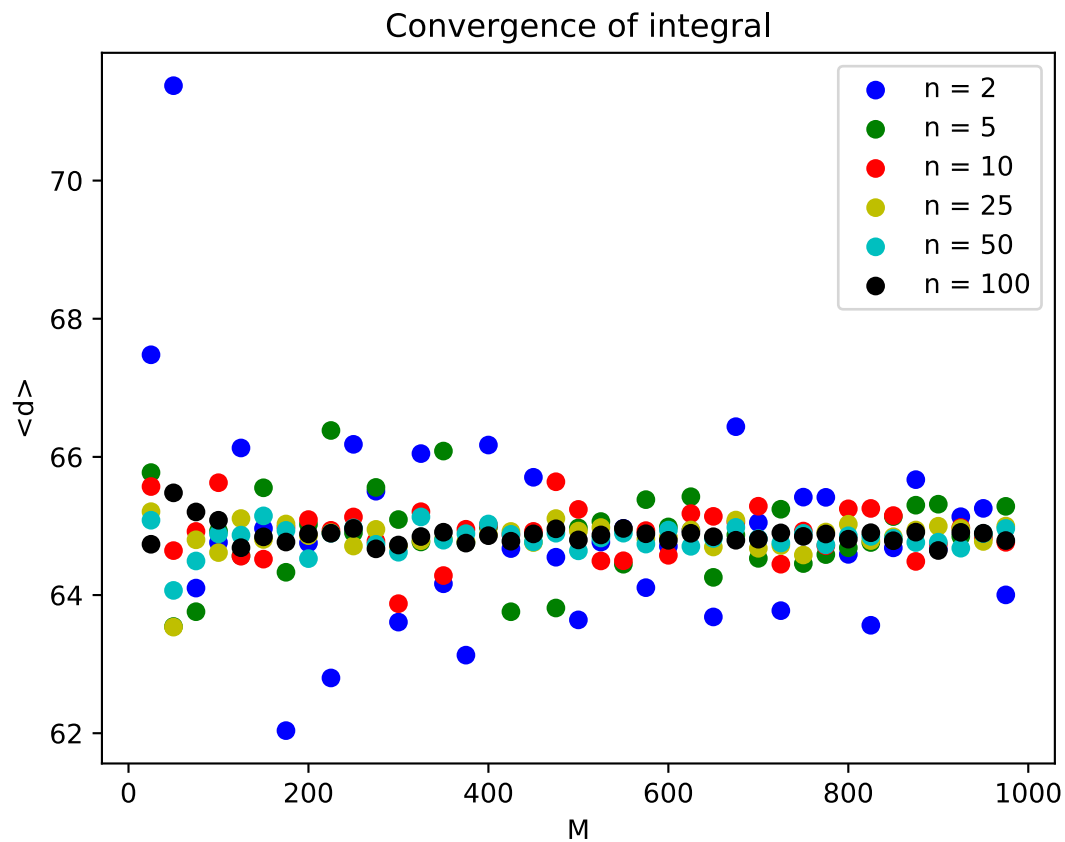

The Monte Carlo calculation was obtained using a cubic box of side L=100, considering spheres of unitary radius R=1.

The number n of particles in the box and the number of iterations M influence respectively the dimensionality and the convergence of the integral. It can be observed that the amplitude of oscillations around the mean value decrease with increasing M, which should tend to infinity in the limit for which the sum turns into an integral. In particular, these oscillations are more damped in case of higher number of particles n. The case n=2 is quite explicative because it still shows oscillations even for high values of M.