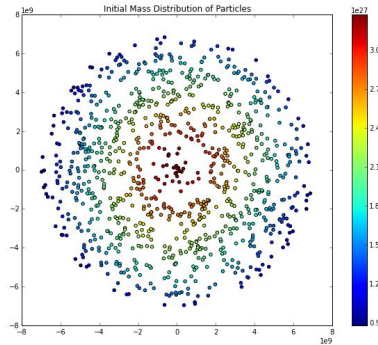


Sai Chikine & Alex Rybchuk



Jupiter Progress Report

Our project as of now can be separated into two parts: setting up initial conditions and iterating through force and displacement calculations.

Initial Conditions

In order to collide two planets, we first have to initialize several factors. First, we initialized position using a radial distribution equation provided by our textbook. Next, we modeled initial densities and the pressure distribution. We were then able to fix the mass of each particle using a compact support smoothing kernel.

Force & Displacement Calculations

These calculations have been causing us some trouble, but we have been making progress. We tried modeling the pressure gradient using a Gaussian kernel, but that led to errors, so we decided to use a compact support kernel. It looks like the pressure gradient is now being calculated correctly. Gravity is causing us issues at the moment, as not all of our particles appear to be affected by gravity, but we are currently debugging that.