Inertial Electrostatic Fusion, Electrostatic and Confinement Time Considerations.

The presentation is split into two parts. Part 1 considers an exact analytical derivation of the potential of a spherical, charged, grid, located inside a grounded conducting sphere. Here, a new method for calculating the potential of a ring charge within a grounded sphere is presented. It is shown that this method can reduce the problem and reduce the computational time. In addition a method for solving the charge build up which occurs at ring intersections is presented. It is shown that this method can be applied to both analytical and numerical models.

In the second Part 2 my presentation, I will consider the 1-D radial model of ion motion presented by Hirsh. It is shown that lack of analysis, in the paper, concerning current limitation effects between different regions in the model lead to inconsistencies in values used. These current limitations are clarified in this presentation. The analysis is followed by a method for calculating the confinement time for the 1-D radial model. Finally a new analytical method for calculating the fractional ion current loss to the grid is presented.