## Vlasiator and visualization

## <u>Otto Hannuksela</u> Vlasiator team, Finnish Meteorological Institute, P.O.Box 503, FI-00101 Helsinki, Finland

otto.hannuksela@helsinki.fi

Vlasiator is a new parallel space plasma simulation code based on the hybrid-Vlasov approach that is being developed at the Finnish Meteorological Institute. Vlasiator has a six-dimensional phase space, out of which three dimensions are real and three are interpreted as velocity space. The motivation for creating a new global space plasma simulation is to predict space weather, find new science and validate the old.

Visualization is a crucial part in understanding the data Vlasiator produces. Vlasiator is programmed in such a way that everything in the simulation is a construction of cells with finite volume. Every cell has a separate three-dimensional velocity space with a velocity distribution whose shape is used to interpret the data. In order to visualize the real- and velocity space one must consider various visualization tools and choose the most suitable one. Without visualization tools the created data would be hard to interpret.