

# Maxeler Apps

# N-Body Simulation



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# Use Cases

- Astrophysics
- Molecular dynamics
- Plasma physics
- Plate tectonics
- Chemical reaction network theory

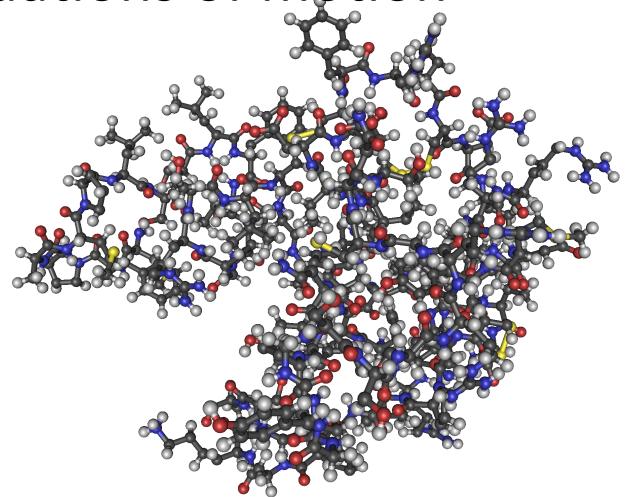
# Astrophysics

- Investigates the dynamics of a few body systems such as Earth - Moon - Sun system
- Understanding the formation of galaxies and the evolution of the entire universe



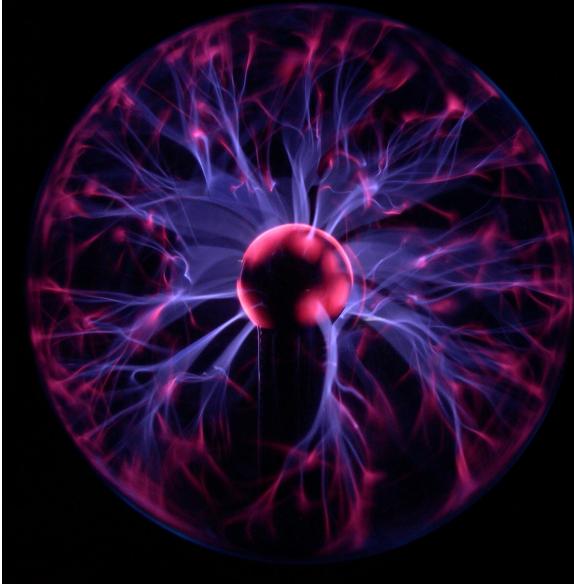
# Molecular Dynamics

- Simulates the physical movements of atoms and molecules
- Atoms and molecules can interact for some time
- The trajectories of atoms and molecules are determined by solving Newton's equations of motion



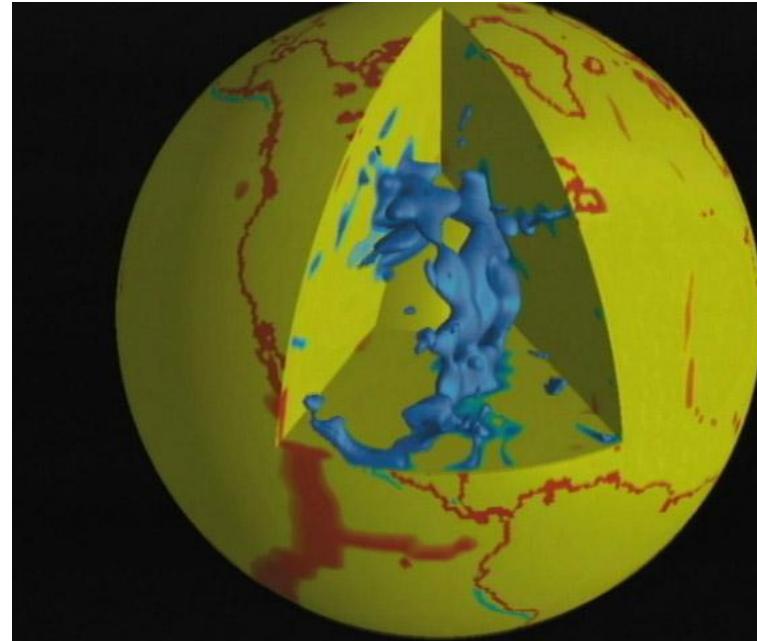
# Plasma Physics

- Electrically neutral medium of unbound positive and negative particles
- Although unbound, these particles are not free in the sense of not experiencing forces
- Electrical currents with magnetic fields are generated when the charges move and particles are affected by each other's fields



# Plate Tectonics

- Describes the large-scale motion of Earth's lithosphere
- Builds on the concept of continental drift



# Chemical Reaction Network Theory

- Attempts to model the behaviour of real world chemical systems
- There are a variety of methods for approaching questions about the dynamical behaviour of chemical reactions arising in real world applications
- A key feature of the theory is the relationship between the graphical structure of the reaction network and the resulting dynamics

