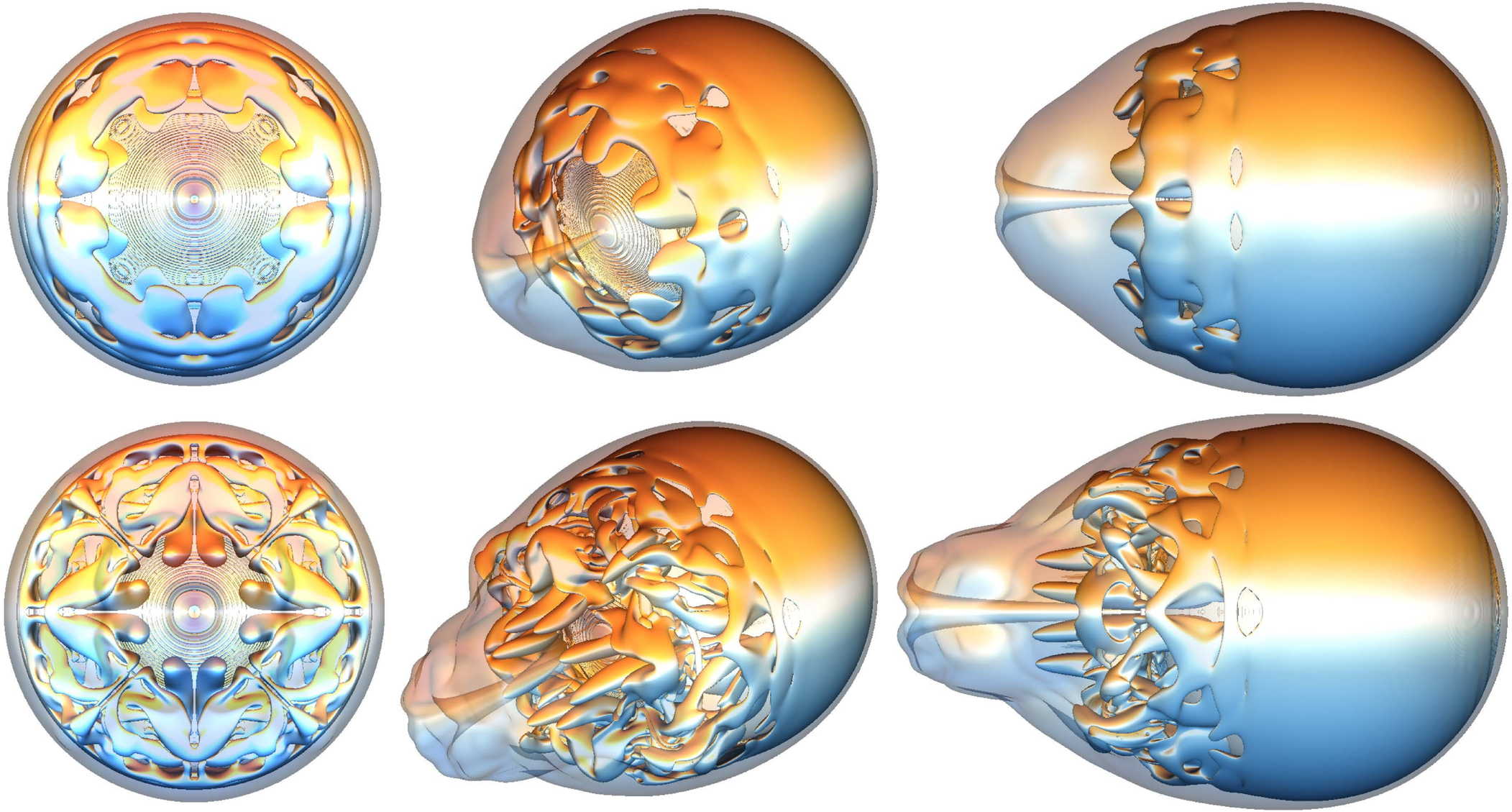

3D Fluid Dynamics Simulation

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A simple flow past a sphere case using a 3D fluid simulation that leverages a highly efficient parallel particle mesh (PPM) library adapted to solving the Navier-Stokes equation via remeshed vortex method. The image contains fluid structures of flow past a sphere at two different time steps, exhibiting the complexity in the vorticity isosurfaces of the fluid behavior at Reynolds number of 2000. Illustrated in the image are the vorticity isosurfaces of the fluid behavior as it encounters the body. Through high-performance computing, the method can be coupled with a learning algorithm that adapts evolution strategies to investigate optimal designs for various applications and to complement experiments in contributing to the scientific world.