

Abstract Submitted
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Visualization of Turbulence-Generated Intrinsic Rotation¹ ELIOT FEIBUSH, STEPHANE ETHIER, WEIXING WANG, WILLIAM TANG, Princeton Plasma Physics Laboratory — A new visualization has been developed of the 3D vector field of plasma flow computed by global gyrokinetic simulations using the GTS code. The visualization shows the direction, magnitude, and structure of turbulence-generated intrinsic rotation in a tokamak. Vectors indicate the clockwise and counter-clockwise flows around the torus. Color-coded vectors are drawn at each grid point on the poloidal planes. A color scale was developed to maximize contrast within the most heavily populated range of data while preserving visibility of the global minimum and maximum values. Technical highlights include transferring large amounts of simulation data from NERSC to PPPL using multiple streams, parallel rendering by the VisIt software, and multiple nx client sessions connecting to a persistent server session. Each of the 1,000 time steps is rendered to a high definition image. The images are assembled into an animated movie that is compressed for efficient, high quality playback. A workflow is in place for producing visualizations of new simulations.

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