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Moment-conserving Simulations of Plasma Edge Turbulence

Objectives

- Develop robust and efficient computational tools using the discontinuous Galerkin finite element with the code **Gkeyll**.
- Use **Gkeyll** to model plasma turbulence in the edge of advanced magnetic confinement fusion devices, such as tokamaks.

Impact

- Accurate modelling of edge turbulence will help predict the performance of large-scale fusion experiments in the effort to obtain a clean, renewable energy source through fusion.

Accomplishments

- **Gkeyll** kinetic simulations of a basic plasma physics experiment captured turbulence levels better than previous fluid models.
- We have developed a new version of **Gkeyll** with improved conservation properties.

