

High fidelity simulations of fast ion power flux driven by 3D field perturbations on ITER R.Akers et al., TH/4-1

In the last 2 years, we have developed **LOCUST-GPU** (the **L**orentz **O**rbit **C**ode for **U**se in **S**tellarators and **T**okamaks), leveraging the power of modern GPU accelerator cards.

By exploiting various Monte Carlo techniques (preferential source loading, roulette/splitting etc.) together with a high fidelity PFC mesh derived from engineering CAD data, fast ion power loading to the ITER divertor is now being studied in unprecedented detail as part of the engineering design process.

More work needs to be done in validation and verification, comparison with other codes (OFMC, ASCOT etc.), testing of the code on existing tokamaks (e.g. on MAST-U/AUG) etc.

HNB + alpha loading must also be studied for a wide range of equilibria and operating scenarios.

