

- GK PIC code ORB5 capable of investigating nonlinear **Alfvén modes** and **energetic particles** and **turbulence**
- Ions/electrons treated gyrokinetically/drift-kinetically
- Global collisionless simulations of a broad radial domain
- **Zonal structures** (GAMs and ZFs) excited by Alfvén modes modulate heat transport
- Next step 1: **EP transport due to Alfvén modes in turbulent plasmas**
- Next step 2: **Predictions for present/future tokamak experiments**

