**Appendix 1: ELD implementation (iterative algorithm)**

- Problem is split into two parts and solved iteratively:  
  \[ V = \nabla \cdot ( \rho \nabla E) \quad \text{and} \quad J = \nabla \times (\sigma \nabla \times E) \]

**Appendix 2: Wave model**

- In the poloidal cross-section of an Alcator C-mod plasma was compared with a ray-tracing code, showing good consistency. The approach based on FEM is computationally less intensive compared to spectral domain solvers, and more suitable for the simulation of larger device such as ITER.