

## List of topics for the viva 2013 – F. I. Parra

### Plasma minimum

- Particle motion in magnetic field
- Quasineutrality, plasma parameter
- Kinetic equations
- Fokker-Planck collision operator (including expansions in mass ratio)
- How to go from kinetic to fluid at high collisionality
- MHD equations, frozen-in law
- MHD waves
- MHD energy principle
- MHD stability of theta-pinch
- Braginskii equations
- Cold plasma dispersion relation
- Hot plasma dispersion relation
- Landau, Barnes and cyclotron damping
- Bump-on-tail instability
- Drift kinetic and gyrokinetic equations

### Fusion minimum

- MHD equilibrium of tokamaks
- ITG instability