## Kinetic modelling and numerics of strongly magnetized tokamak plasmas with mass diparate particles. The electron Boltzmann relation.

Claudia Negulescu<sup>1</sup> and Stefan Possanner<sup>2,3</sup>

<sup>1</sup>Université Paul Sabatier, Institut de Mathématiques de Toulouse, France

<sup>2</sup>Numerical Methods in Plasma Physics Max-Planck-Institut für Plasmaphysik Boltzmannstr. 2 85747 Garching, Germany

<sup>3</sup>Technical University of Munich Department of Mathematics Boltzmannstr. 3, 85748 Garching, Germany

In the present talk I will justify on a formal level the obtention of the electron Boltzmann relation in a suitable asymptotic limit, starting from a fully kinetic description (Fokker-Planck) of magnetically confined fusion plasmas. The obtained asymptotic limit model consists of the electron Boltzmann-equilibrium along the magnetic field lines, completed with an ion kinetic equation, all this coupled via the Poisson equation. Some first numerical examples via an Asymptotic-Preserving scheme permitting to follow on the discrete level this asymptotic limit, will be presented.