

## Drift-diffusion model for spin-coherent electron transport in semiconductors

The model describes the electron transport in semiconductors with magnetic properties. The main objective is to take into account spin of electrons. The model incorporates the Poisson equation for the electric potential, and continuity equations for the charge density and the spin-density components. The equations in the system are strongly coupled and the system is nonlinear due to the coupling of the densities and potential. At the talk analytical results for the model (existence, uniqueness, boundedness of the solution) will be presented. Furthermore, numerical results for of 1D simulation will be shown.