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DK Seminar

April 6, 2015, 13:15 - 14:45
University of Vienna
Oskar-Morgenstern-Platz 1, HS 2.

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Spinoral energy transport model for semiconductors

The model describes the spinoral carrier transport in ferromagnetic semiconductors. The main advance of the model compared to existing energy-transport models is that the current one takes into account spin of electrons. The model incorporates the Poisson equation for the electric potential, and continuity equations for the charge density, spin-density components and energy. The equations in the system are strongly coupled and the system is nonlinear due to the coupling of the densities and potential. For a longer time I have encountered problems with numerical implementation of the model. In the talk I will share the possible roots of my misfortune, explain the ways I used to overcome it and present some numerical results.