

## Talk announcement

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Tuesday, Mar 31, 2025  
15:30, S2 059

## PhD Colloquium: Energy-based modeling in magnetic field simulations

We consider the numerical analysis and solving of magnetic field problems with complex magnetic material behaviour like saturation effects, anisotropy and magnetic hysteresis. By formulating the magnetic constitutive law in terms of an energy density we establish the well-posedness of magnetic field problems with different formulations and the global convergence of iterative solvers. As a starting point the results are demonstrated for the anhysteretic case and then systematically generalized to the case with a hysteretic material model. We present numerical results of the previous work throughout the presentation and at the end give an outlook about current and future research topics.