
Einladung zu einem Vortrag
im Rahmen des Doctoral Seminar in Mathematics von

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zum Thema

Optimal Control of Phase-Field Fracture Evolution

Ort: I.2.01 der Universität Klagenfurt

Zeit: Montag, 24. September 2018, um 13:30 Uhr.

Kurzfassung:

Within this talk, we will address optimization problems governed by phase-field fracture/damage processes. The presence of an irreversibility of the fracture growth gives rise to a nonsmooth system of equations. To derive optimality conditions we introduce an additional regularization and show that the resulting optimization problem is well-posed. We will discuss first order necessary optimality conditions and the corresponding constraint qualifications needed. Finally, we will see, that a quadratic approximation to the optimization problem is always solvable.

Further, to allow for the analysis of finite dimensional approximations to this problem, we provide a new regularity resulting providing improved differentiability of elliptic systems with non-smooth coefficients. We will finally give an outlook on the resulting discretization error estimates.

This is joint work with:

Robert Haller-Dintelmann, Hannes Meinlschmidt, Masoumeh Mohammadi, Ira Neitzel, Thomas Wick

Das Institut für Mathematik freut sich auf Ihren Besuch.

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