

# Domain Decomposition Methods for Constrained and Nonlinear Problems

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## Abstract

The parallel solution of large scale systems arising from constrained minimization problems are non-linear problems is far from trivial, as the underlying decomposition has to take into account also the structure of the constraints and the non-linearities, respectively. In this talk, we present and discuss different non-linear decomposition methods for constrained and unconstrained problems and relate their internal working to ideas and principles from optimization. Examples from fracture and contact mechanics as well as from machine learning illustrate our findings.