

Numerical treatment of dynamic contact problems with the Damped Normal Compliance condition

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In this talk, I will discuss numerical approaches to dynamic contact problems formulated with the Damped Normal Compliance (DNC) condition. The DNC condition combines the normal compliance law with a damped normal response, so that the reactive obstacle possesses both stiffness and damping, and energy is dissipated upon contact. This provides a more accurate description of the contact process and makes the classical coefficient of restitution redundant. I will describe a finite element scheme for the resulting discrete problems. I will also comment on how the associated discrete problems can be treated within an optimization-based framework, which opens the way to handling more general, possibly nonsmooth, contact laws.

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