A model for adhesive contact with friction

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In this talk, based on an ongoing collaboration with E. Bonetti and G. Bonfanti, we consider a model for contact between a viscoelastic body and a rigid foundation, in which both the effects of (irreversible) adhesion and of friction are taken into account. We describe the adhesion phenomenon in terms of a damage surface parameter according to Fremonds theory, and we model unilateral contact by Signorini conditions and friction by a nonlocal Coulomb law. We analyze the resulting PDE system and state a global-in-time existence result.