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**Anna Zemlyanova\*** (azem@math.tamu.edu). *The effect of a surface tension on the stress field near a curvilinear crack.*

We consider a thin plate with a curvilinear crack under the action of in-plane stresses. A linear elasticity model is assumed for the behavior of the material of the plate in the bulk. A non-linear boundary condition with the consideration for a surface tension dependent on the curvature of the crack is given on the crack surface. Using Muskhelishvili's formulas for stresses and displacements and Savruk's integral representations of complex potentials the problem is reduced to a complex singular integrodifferential equation. The regularization of this equation by reduction to the system of two real Fredholm equations is presented. (Received September 06, 2011)