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Misfit Stresses Due to a Cylindrical Dilatational Inclusion of Annular-Sector Cross-Section in an Infinite Elastic Medium

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Abstract. An elastic model for a cylindrical dilatational inclusion of annular-sector cross-section in an infinite elastic medium is considered. The stress fields are found in a closed analytical form and are illustrated by stress maps. Specific features in the stress distribution are revealed and discussed in detail. It is shown that the stress magnitude can be so high that various mechanisms of stress relaxation can be activated.

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