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Incompatible strain gradient elasticity of Mindlin type: screw and edge dislocations. (English) [Zbl 1481.74081](#)

Acta Mech. 232, No. 9, 3471-3494 (2021).

In this paper, the author provides an extensive study regarding incompatible isotropic strain gradient elasticity theory of Mindlin type, by obtaining exact analytical solutions for the displacement fields, plastic distortion and dislocation densities, stress and elastic distortion fields of screw and edge dislocations.

Reviewer: Ioan Bucataru (Iași)

MSC:

74B99 Elastic materials

74C99 Plastic materials, materials of stress-rate and internal-variable type

Keywords:

incompatible strain gradient elasticity; elastic distortion; plastic distortion; screw dislocation; edge dislocation; Cauchy stress field; characteristic length

Software:

[GitHub](#)

Full Text: [DOI](#)

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