

QUASISTATIC FRICTIONAL CONTACT PROBLEM WITH DAMAGE FOR THERMO-ELECTRO-ELASTIC-VISCOPLASTIC BODIES

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Abstract. The aim of present paper is to study the process of a quasistatic frictional contact between a thermo-electro-elastic-viscoplastic body with damage, and an obstacle, the so-called foundation. We assume that the normal stress is prescribed on the contact surface and we use the quasistatic version of Coulomb's law of dry friction. We establish a variational formulation of the model, which is set as a system involving the displacement field, the stress field, the electric potential field, the temperature field and the damage field. Existence and uniqueness of a weak solution of the problem is proved. The proof is based on arguments of evolutionary variational inequalities, parabolic inequalities, differential equations and fixed point.

Mathematics subject classification (2020): 74C10, 49J40, 74M10, 74M15, 47H10.

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