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Crack tip electric polarization saturation of a thermally loaded penny-shaped crack in an infinite thermo-piezo-elastic medium

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Highlights

- Electric PS of a thermally loaded crack is studied analytically and numerically.
- Electrically semi-permeable boundary conditions are adopted on crack surfaces.
- The nonlinear equations governing the electric yielding zone are solved.
- The validity of the analytical solution is checked via a numerical discrete method.
- An empirical formula of the electric yielding zone is developed.

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