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## Crust-Magnetosphere Feedback

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We investigate the magnetic field evolution in the crust and the magnetosphere of a neutron star considering the feedback between the two regions. The crustal magnetic field evolves due to the Hall effect and the subdominant Ohmic dissipation. We explore three main cases: (i) A magnetic field fully confined in the crust. (ii) A magnetic field evolving in the crust coupled to a current-free magnetosphere. (iii) A magnetic field that evolves in the crust and is coupled to a force-free magnetosphere. In case (iii) we assume that the magnetic field reaches force-free equilibrium through a magnetofrictional process that is simulated separately. We quantify the differences in the overall evolution via a numerical calculation.

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