Coupling scalar and vector potentials on non-matching grids for eddy currents modelling in moving conductors

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The $T - \Omega$ formulation of the magnetic field is a widely used approach for the approximation of the magnetic quantities modelled by the eddy current equations. This decomposition allows to use a scalar function in the main part of the computational domain, reducing the use of vector quantities to the conducting parts. We propose here to approximate these two quantities on different and non-matching grids to be able for instance to tackle a problem where the conducting part can move inside the global domain. The connection between the two grids is managed with the mortar element tools. The talk will focus on the implementation of the resulting algorithm and on the presentation of numerical results.

References:

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