

REVISITING FORCES

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Although a Lagrangian approach using differential forms ("Maxwell equations in material form") seems to be the most promising to study forces, the present confusion where different formulas coexist ("Helmholtz force", "Kelvin force", "Maxwell force", ...) should be addressed in the more familiar language of good old vector fields: Just because this is the language used by most parties in the controversy. I will outline a theory of forces of this kind, first reestablishing the 'force is minus the derivative of magnetic energy ...' standard result, then treating a few basic cases. (That of anisotropic permeability is already challenging enough.)

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