

Abstract Submitted
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The Lorentz gas in Kaluza's MHD: Transport equations¹ ALFREDO SANDOVAL-VILLALBAZO, ALMA ROCIO SAGACETA-MEJIA, JOSE HUMBERTO MONDRAGON-SUAREZ, Department of Physics and Mathematics, U. Iberoamericana — Relativistic kinetic theory is applied to the study of the transport processes present in a Lorentz gas, using a geometric five-dimensional space-time. While the conventional transport equations are recovered in the Newtonian limit, it is shown that relativistic corrections to the conduction and diffusion fluxes arise within this formalism. A brief review of the conceptual advantages of the Kaluza-type approach to magnetohydrodynamics is also given.

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