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Observational testing the ideas of turbulent reconnection in partially ionized gas

Diego Falceta-Goncalves (1) and Alex Lazarian (2)

(1) Universidade Cruzeiro do Sul, São Paulo, Brazil (diego.goncalves@cruzeirodosul.edu.br), (2) University of Wisconsin, Madison, USA

Decoupling of ions and neutrals and the resumption of the turbulent cascade in the fluid of ions at scales smaller than the decoupling scale are the key parts of the model of turbulent reconnection in the partially ionized gas. We show that the observations of the differences of ion and neutral velocities in molecular cloud cores provide a way of testing the validity of the model above. We perform numerical simulations to show that the line of sight corresponding to the minimal observed velocity dispersion reflect the actual 3D dispersion of the species concerned. This also allows to estimate the magnetic field strength.