
Search for Stable Magnetohydrodynamic Equilibria in Barotropic Stars.

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Abstract

It is now believed that magnetohydrodynamic equilibria can exist in stably stratified stars due to the seminal works of Braithwaite & Spruit (2004) and Braithwaite & Nordlund (2006). What is still not known is whether magnetohydrodynamic equilibria can exist in a barotropic star, in which stable stratification is not present. It has been conjectured by Reisenegger (2009) that there will likely not exist any magnetohydrodynamical equilibria in barotropic stars. We aim to test this claim by presenting preliminary MHD simulations of barotropic stars using the three dimensional Stagger code of Nordlund & Galsgaard (1995).

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