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# The Hall effect in RAMSES for star formation

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## Abstract

The regulation of angular momentum in star formation is a critical topic. Recent simulations have been able to produce first and second Larson cores with disks by using non-ideal MHD processes so as to weaken the magnetic braking. The Hall effect, while having a crucial impact on the distribution of angular momentum in collapsing cores, is the least studied of these non-ideal mechanisms due to the difficulty of its numerical treatment I will describe our implementation of the Hall effect in RAMSES. The scheme has a second order convergence in space and is able to reproduce the dispersion relation of whistler waves, the characteristic waves associated with the Hall effect. I will finally present a test of a dense core collapse, and show that conserving the angular momentum after the formation of the first Larson core is a difficult task.

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