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NATIONAL INSTITUTE FOR COMPUTATIONAL SCIENCES
NICS

Star Formation with Turbulence and Magnetic Fields

Numerical models with EnzoMHD on Kraken

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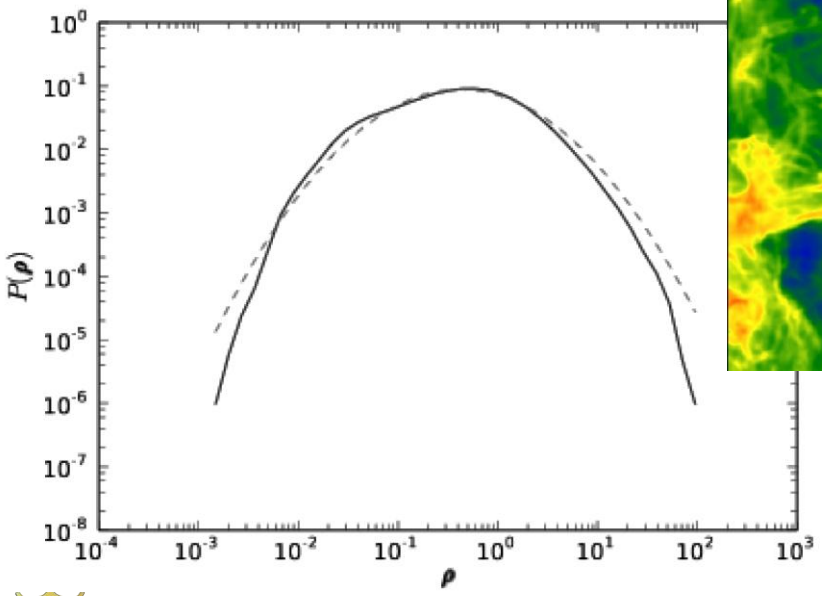
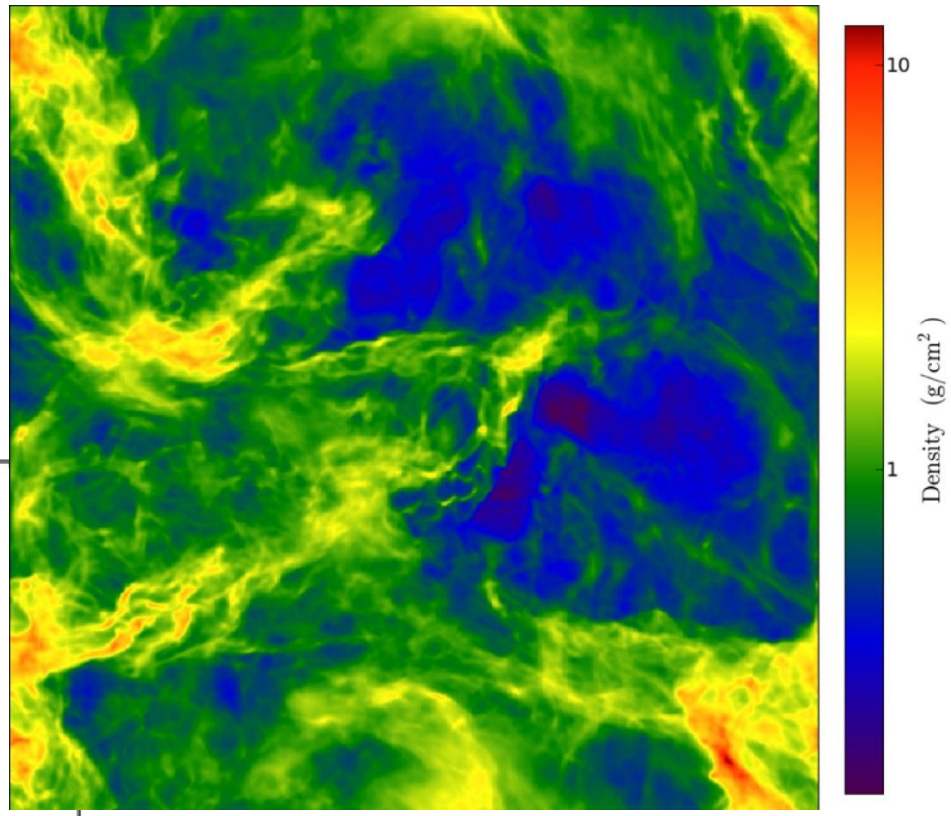
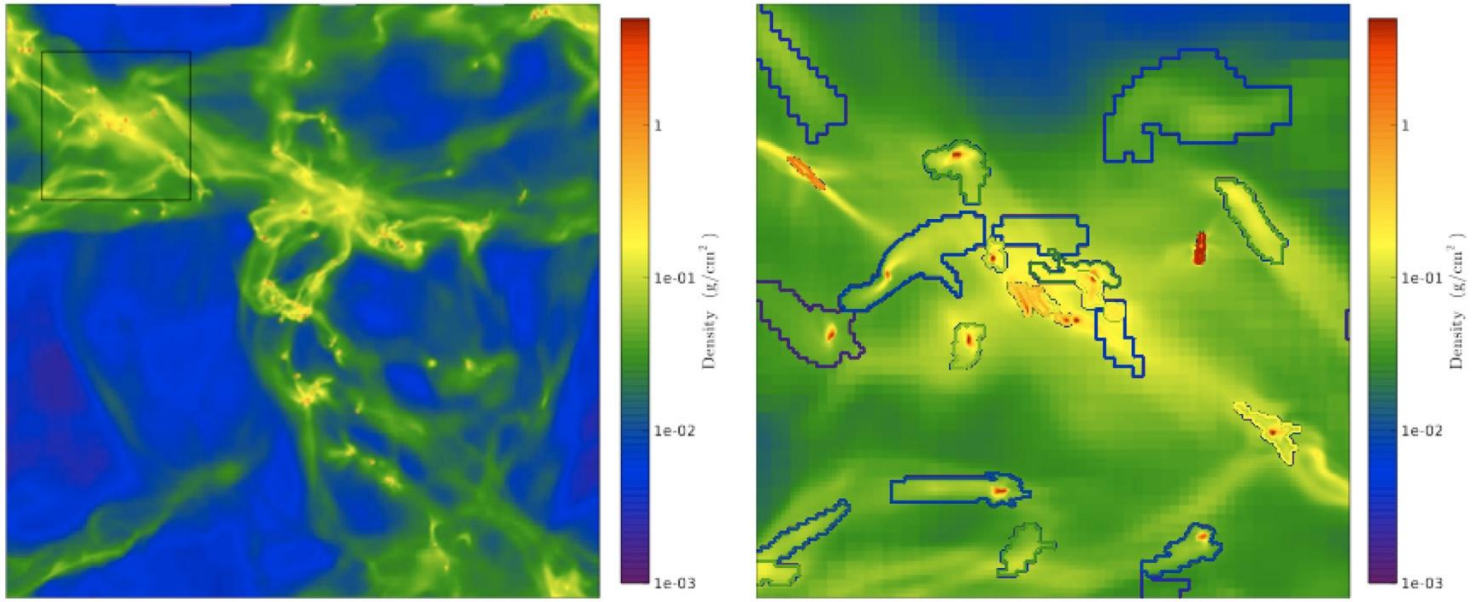
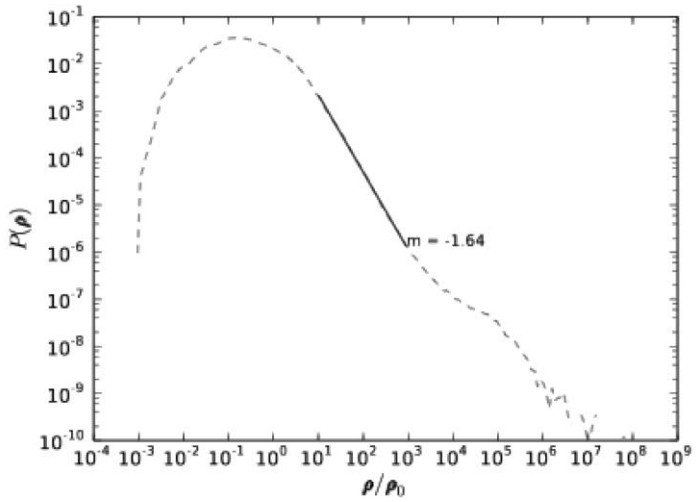
High resolution simulations of MHD turbulence give initial conditions for star formation





The addition of gravity creates regions of very high density, which creates protostellar cores





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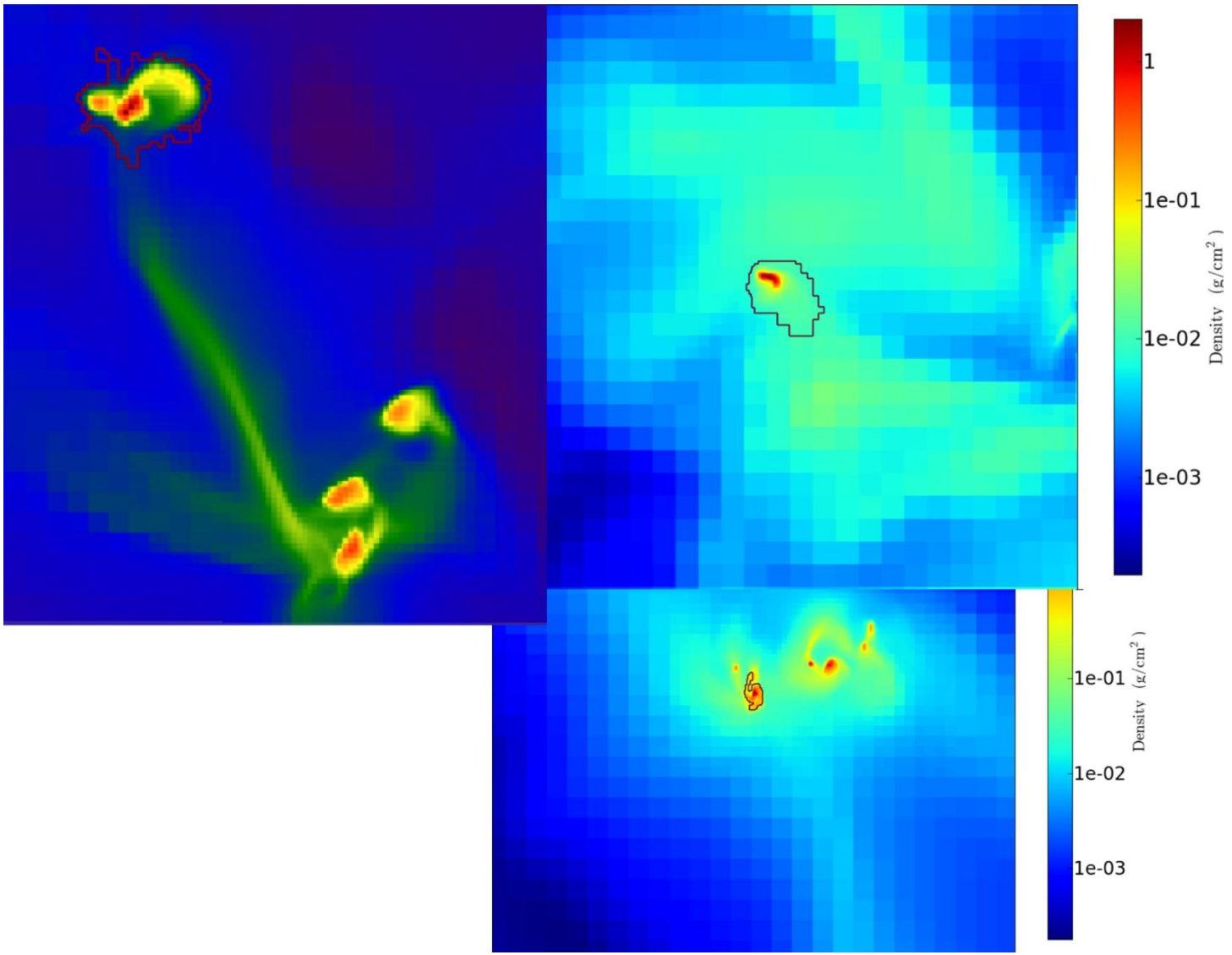
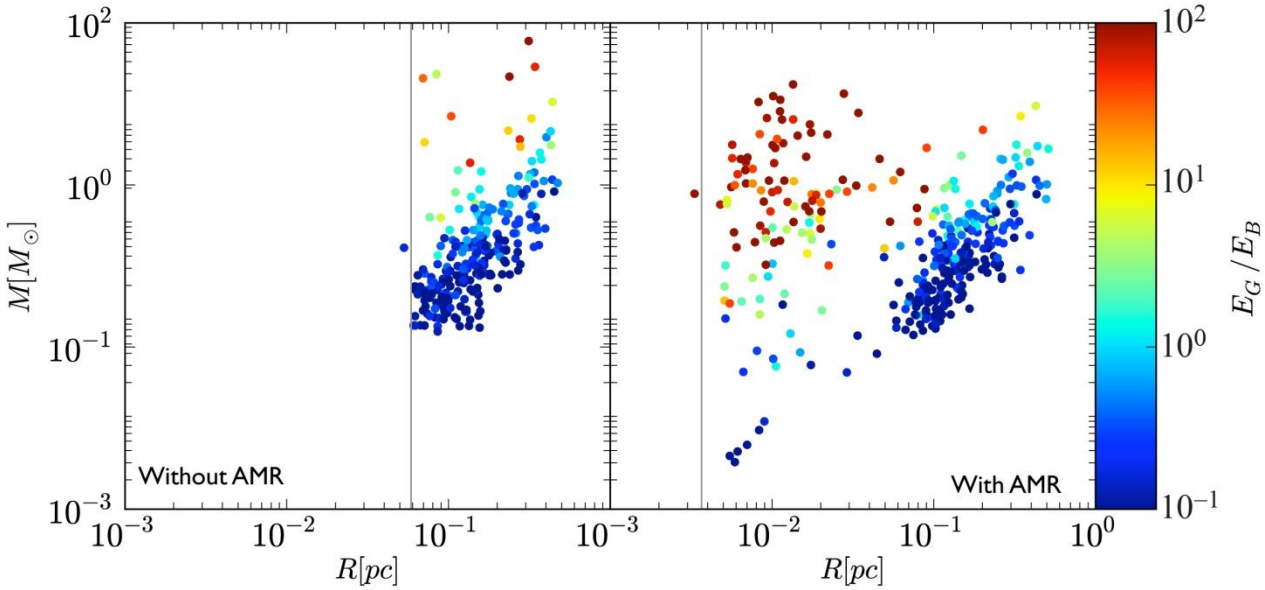
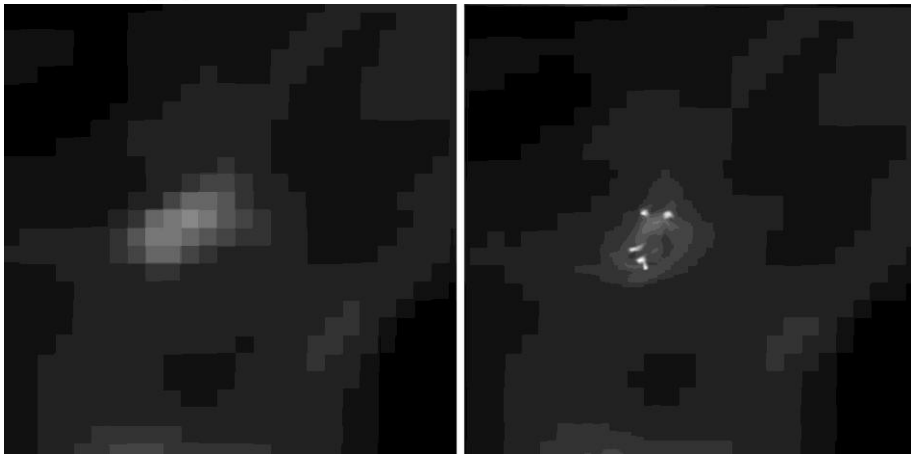
Prestellar cores, stellar birthplace



Adaptive mesh refinement allows us to follow prestellar cores in unprecedented detail

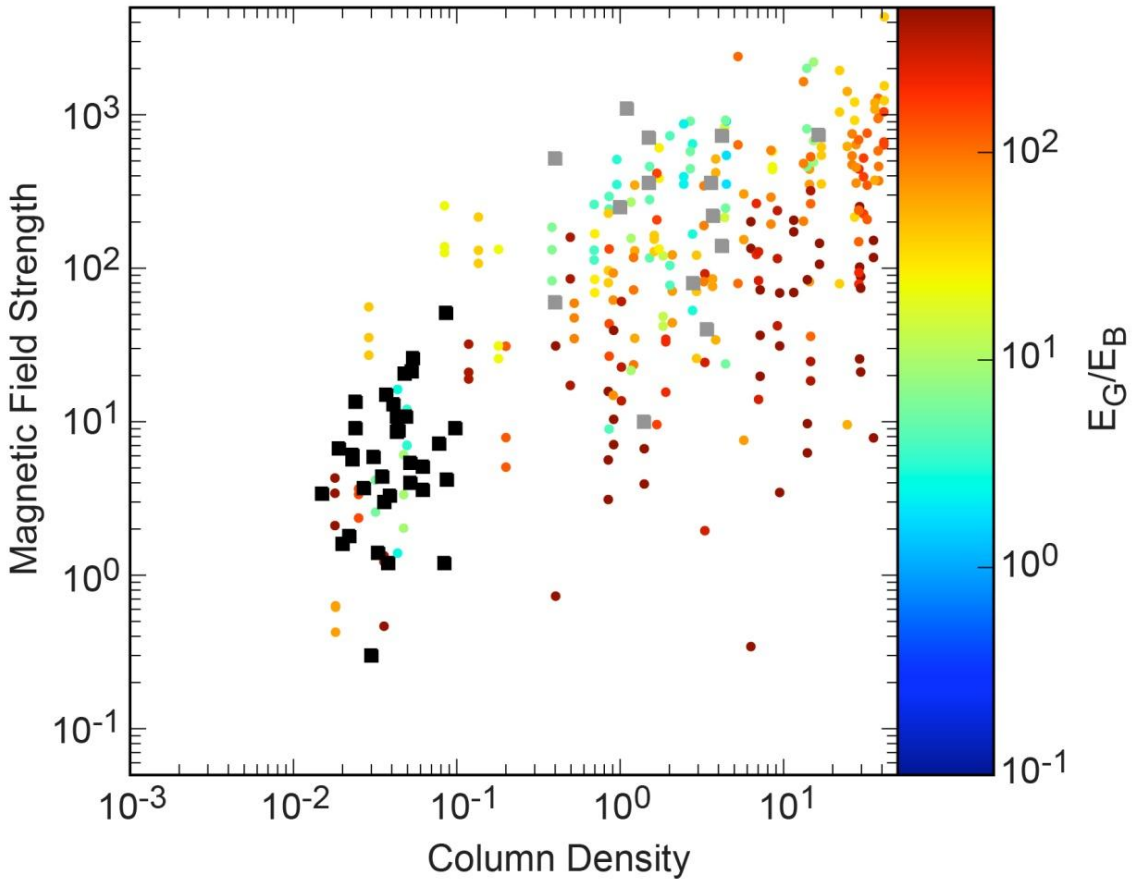




Without AMR

With AMR

Magnetic properties of simulated cores match observations



OH Zeeman Observations (Troland + 2008)

CN Zeeman Observations (Flagarone + 2008)

Simulated MHD Cores (Collins + 2010)

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Contact

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