Comparison of SPH and AMR in isolated galaxy simulations

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The ability of numerical simulations to reproduce cloud-cloud collisions together with gravitational, thermal and magnetic instabilities are key in correctly modelling the interstellar medium. Fundamental differences in the way that Smoothed Particle Hydrodynamics (SPH) and Adaptive Mesh Refinement (AMR) codes treat viscous friction and rotational frames of reference may play a role in how shear due to galactic rotation influences the structure of the ISM. We compare isolated galaxy simulations run with SPH and AMR and examine the properties of star-forming clouds in each case, for example the masses, sizes and rotations of the clouds.