

modeling molecular gas and associated star formation in cosmological simulations

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with



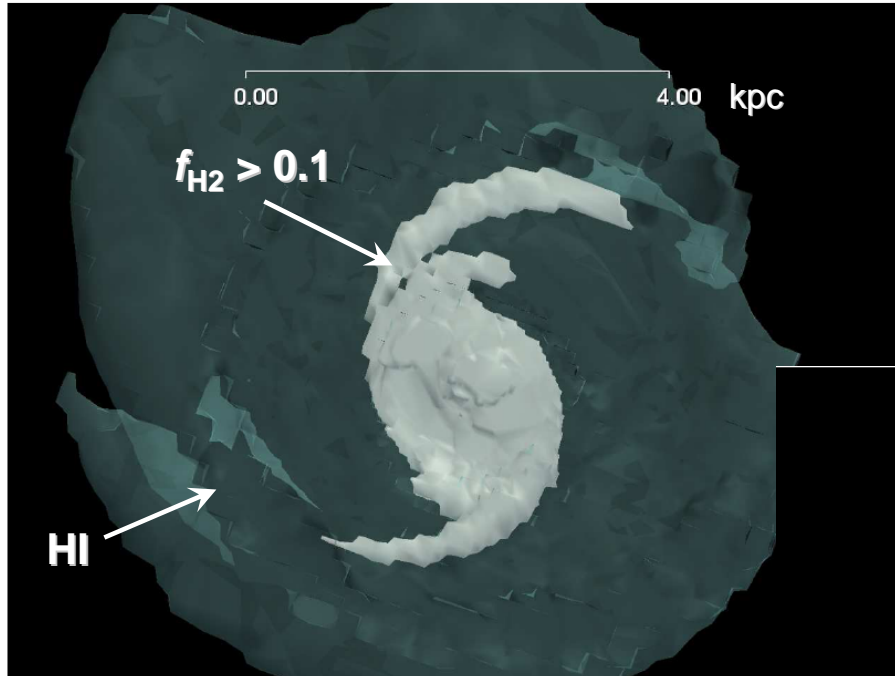
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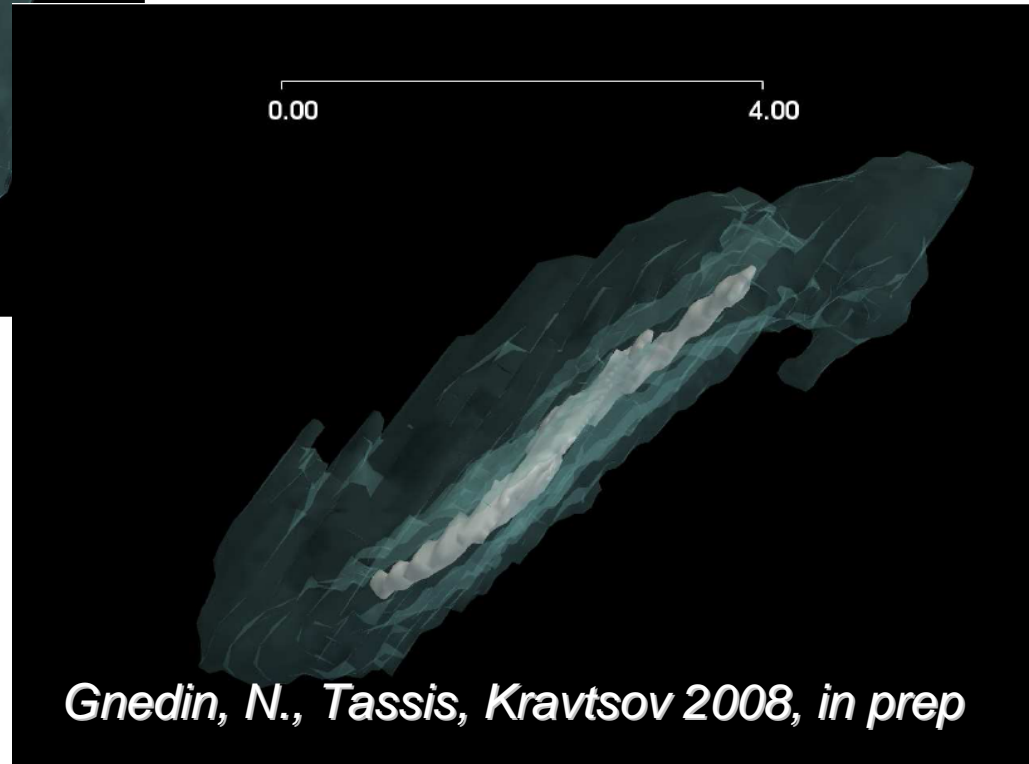
Approximate model of H₂ formation and radiative transfer

dense, molecular gas traces densest, high-pressure regions of the ISM



face-on and edge-on views of H I and H₂ distribution in a $z \sim 4$ gas disk

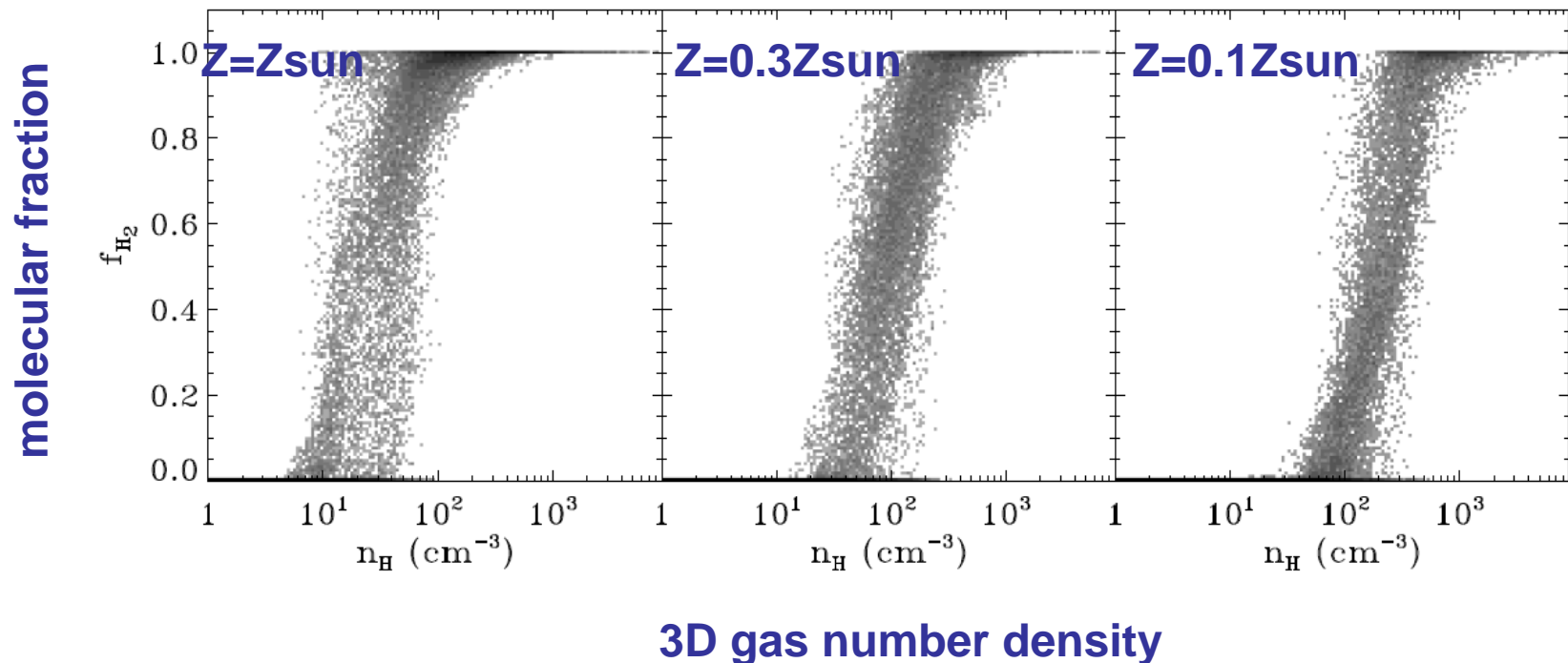
Galaxy formation simulation (ART code) with approximate 3D radiative transfer and a model for H₂ formation on dust with approximate self-shielding using Sobolev approximation



Gnedin, N., Tassis, Kravtsov 2008, in prep

Molecular fraction as a function of gas surface and local 3D density

Strong trends with metallicity (dust content) and local UV flux



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