

Title

Environmental dependence of GMCs in M83

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Abstract

This talk presents results of giant molecular clouds formed in a hydrodynamical model of the barred spiral galaxy, M83. Our global model resolves down to 1.5 pc and explores the properties of the clouds forming in the bar, spiral and disc environments. The property distributions of the GMCs show only a small dependence based on their environment, however we notice three distinct different cloud types emerging, whose relative number is environment dependent. These cloud types consist of typical clouds (ones whose mass and radius agrees well with observations), massive clouds (with radii larger than 30 pc and mass above $10^7 M_{\text{sun}}$) and transient clouds who are typically unbound with short life times. This talk discusses the environment dependence of these cloud types, their evolution and looks at the expected star formation rate from different models.