

## **Exploring the Regulation of Star Formation in Global Galaxy Simulations**

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The three main drivers of structure in galactic disks are thought to be galactic shear, the two-phase thermal instability, and star formation/stellar feedback. It is the interplay of these drivers which regulates processes such as Giant Molecular Cloud (GMC) formation and, consequently, star formation. We present the results of a suite of high-resolution simulations of an isolated Milky Way-type galaxy. To appropriately model the two-phase instability, we employ a photoelectric heating term that varies with galactic radius. Our approach reproduces the two-phase structure of the Interstellar Medium (ISM) suggested by Wolfire et al. (2003). The galactic disks are extended, allowing us to probe the characteristics of the ISM at various positions in the galaxy and the truncation of star formation in the outer disk regions. Our results hold important implications for the formation of GMCs and the regulation of star formation throughout the galactic disk.