

Galactic Winds Driven by Supernova and Radiation Feedback: Theory and

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ABSTRACT: Galactic winds are ubiquitous in most rapidly star-forming galaxies. They are crucial to the process of galaxy formation and evolution, regulating star formation, shaping the stellar mass function and the mass-metallicity relation, and enriching the intergalactic medium with metals. Although important, the physics of galactic winds is still unclear. Winds may be driven by many feedback processes including overlapping supernovae explosions, radiation pressure of starlight on dust grains, and cosmic rays. However, the growing observations of multiphase structure in galactic winds in a large number of galaxies have not been well explained by any models. In this talk I will focus on supernova- and radiation-pressure-driven winds from sub-pc to galactic scales. Using the state-of-the-art numerical simulations, I will assess the relative merits of these driving mechanisms for accelerating multiphase winds to observed velocities, and momentum flux boost during wind propagation.