Title:	Suppression of galactic outflows by cosmological infall and circumgalactic medium
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Abstract:	We investigate the relative importance of two galactic outflow suppression mechanisms: (a) cosmological infall of the intergalactic gas on to the galaxy, and (b) the existence of a hot circumgalactic medium (CGM). Considering only radial motion, the infall reduces the speed of outflowing gas and even halts the outflow, depending on the mass and redshift of the galaxy. For star-forming galaxies, there exists an upper mass limit beyond which outflows are suppressed by the gravitational field of the galaxy. We find that infall can reduce this upper mass limit approximately by a factor of 2 (independent of the redshift). Massive galaxies ($\gtrsim 10^{12}\,M_\odot$) host large reservoir of hot, diffuse CGM around the central part of the galaxy. The CGM acts as a barrier between the infalling and outflowing gas and provides an additional source of outflow suppression. We find that at low redshifts ($z \lesssim 3.5$), the CGM is more effective than the infall in suppressing the outflows. Together, these two processes give a mass range in which galaxies are unable to have effective outflows. We also discuss the impact of outflow suppression on the enrichment history of the galaxy and its environment.
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