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Idealized cloud crushing simulations in expanding background

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Cold gas is ubiquitously found in the circumgalactic and intracluster medium (CGM/ICM). Clouds can form and be accelerated in the expanding winds generated by galactic outflows. I present our recent work where we study the growth and survival of cold, dense structures/clumps in these environments. We have designed a cloud crushing setup that accounts for the movement of the dense cloud in a dynamically expanding background wind. This is a novel simulation setup and more realistically models the background outflow compared to the "vanilla" cloud crushing setup studied extensively in the literature. We also quantify the effect of cloud geometry on the survival and growth of these clouds. The motivation is to generalize cloud crushing in order to encompass CGM environments with cold clumps as well as the filamentary structures in the ICM or ram-pressure stripped tails of jellyfish galaxies.

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