



# The atomic gas mass of galaxies during the epoch of galaxy assembly

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Star-formation activity in the Universe is known to have peaked roughly 8-11 billion years ago, with about half of the current stars born in this period, the "epoch of galaxy assembly". Today, the star-formation activity is lower by more than an order of magnitude; the causes of this decline remain unknown. Addressing this question requires one to understand the evolution of the neutral atomic hydrogen (HI) in galaxies, the main fuel for star formation. Unfortunately, the weakness of the hyperfine 21cm line, the main tracer of the HI content of galaxies, has meant that we know little about the atomic gas mass of high-redshift galaxies and its evolution. "Stacking" of the 21cm emission signals from a large sample of galaxies, observed simultaneously with a radio telescope, can allow one to determine the HI properties of the population. In this talk, I will describe our recent results from such 21cm stacking experiments, using the upgraded Giant Metrewave Radio Telescope to probe the atomic gas mass and gas properties of star-forming galaxies over 70% of the age of the Universe.

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YouTube Live