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The hosts of early ionised bubbles: unveiling the most luminous Lyman-alpha emitters in the epoch of reionisation (Jorryt Matthee)

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Distant luminous Lyman-alpha emitters are excellent targets for detailed observations of galaxies in the epoch of reionisation . Spatially resolved observations of these galaxies allow us to simultaneously probe the emission from young stars, partially ionised clouds in the interstellar medium and to constrain the properties of surrounding hydrogen gas in the circumgalactic medium. Hence, these observations can provide a glimpse of what the ELTs will be able to do for much fainter objects. In this talk specifically, I will focus on recent results from spectroscopic follow-up studies of luminous galaxies observed only ~500 Myr after the Big Bang with ALMA, HST/WFC3, and MUSE and X-SHOOTER on the VLT. We find that these galaxies likely reside in early ionised bubbles and are complex systems, consisting of multiple well separated and resolved components where traces of metals and outflows are already present.

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