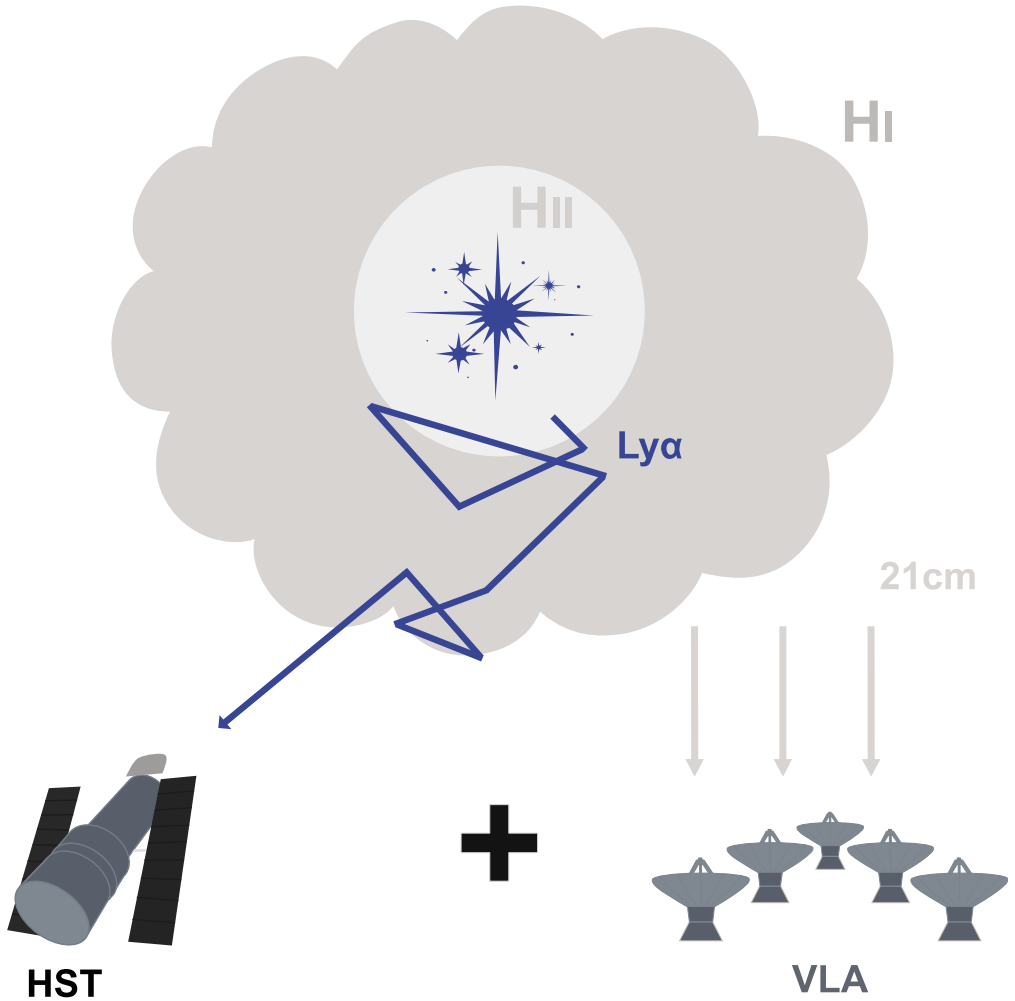
Investigating the link between Lyman-α and 21cm HI emission in nearby galaxies



- Lyα: scattering-like radiative transfer in HI
- Link between neutral gas properties and 21cm?
- **Le Reste et al. 2025a:** comparison of Lyα and 21cm observables, obtained with the HST and the VLA, for 37 z~0.03 star-forming galaxies.

A&A, 693, A253
ArXiv: 2411.00086

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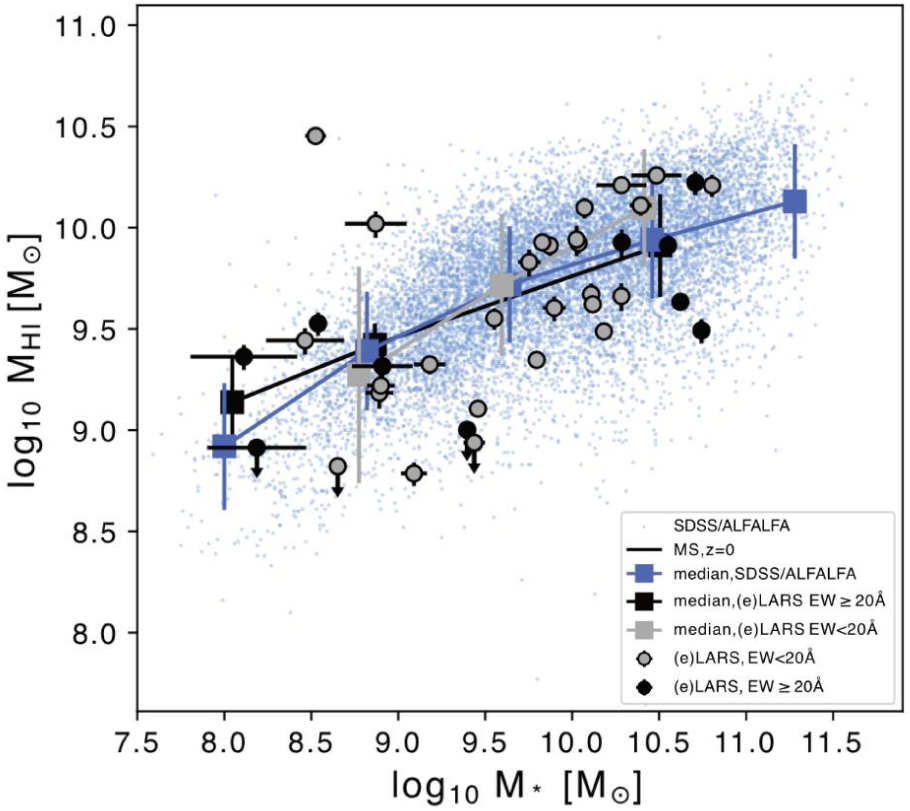
Le Reste et al. 2025a

1) Do Lyα emitters have special HI properties?



→LAEs have HI properties consistent with z=0 optically-selected galaxies.

They do **NOT** preferentially have low HI contents

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2) Do 21cm and Lyα observables correlate in any way?

We **do not find any strong correlation** ($p<3e-3$) between global HI properties and Lyα observables.

→ High-angular resolution 21cm data is needed to verify if HI regulates Lyα emission on smaller physical scales (<30kpc).

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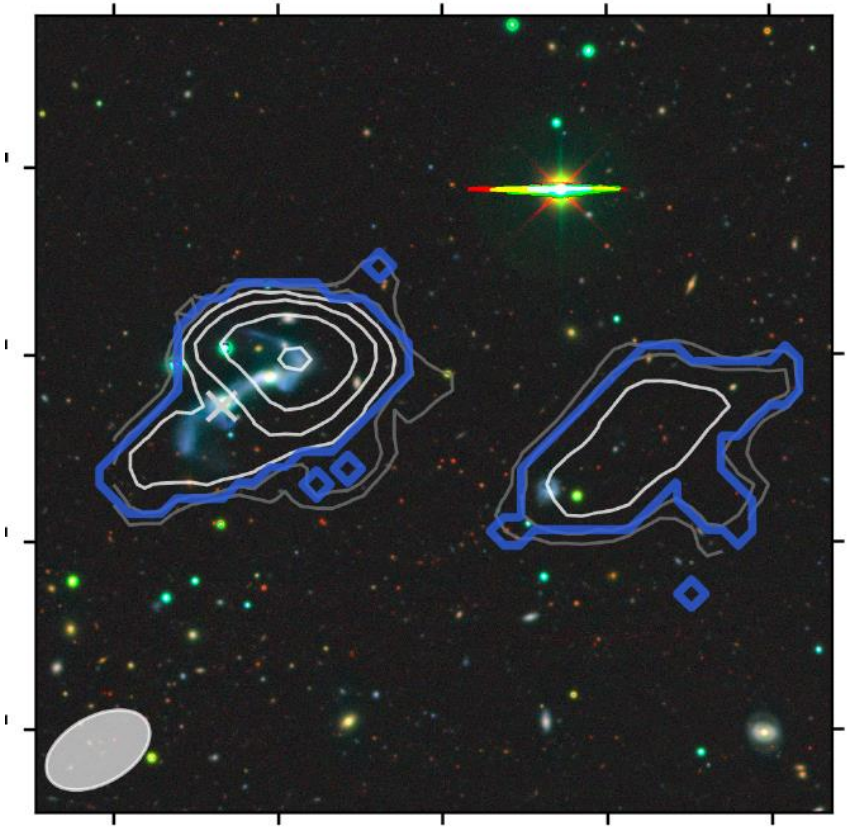
3) Are mergers more likely to emit Lyα?



84% of LAEs (EW>20 Å) are mergers

→ Major and minor galaxy mergers could play a role in Lyα emission, but Lyα observables are ultimately determined by the line-of-sight observed.