

# Investigating systematic differences between simulations and observations.

Credit: Michele Mastropietro

Credit: ESA/Hubble & NASA

## “Observations” of simulated dwarf galaxies (in preparation)

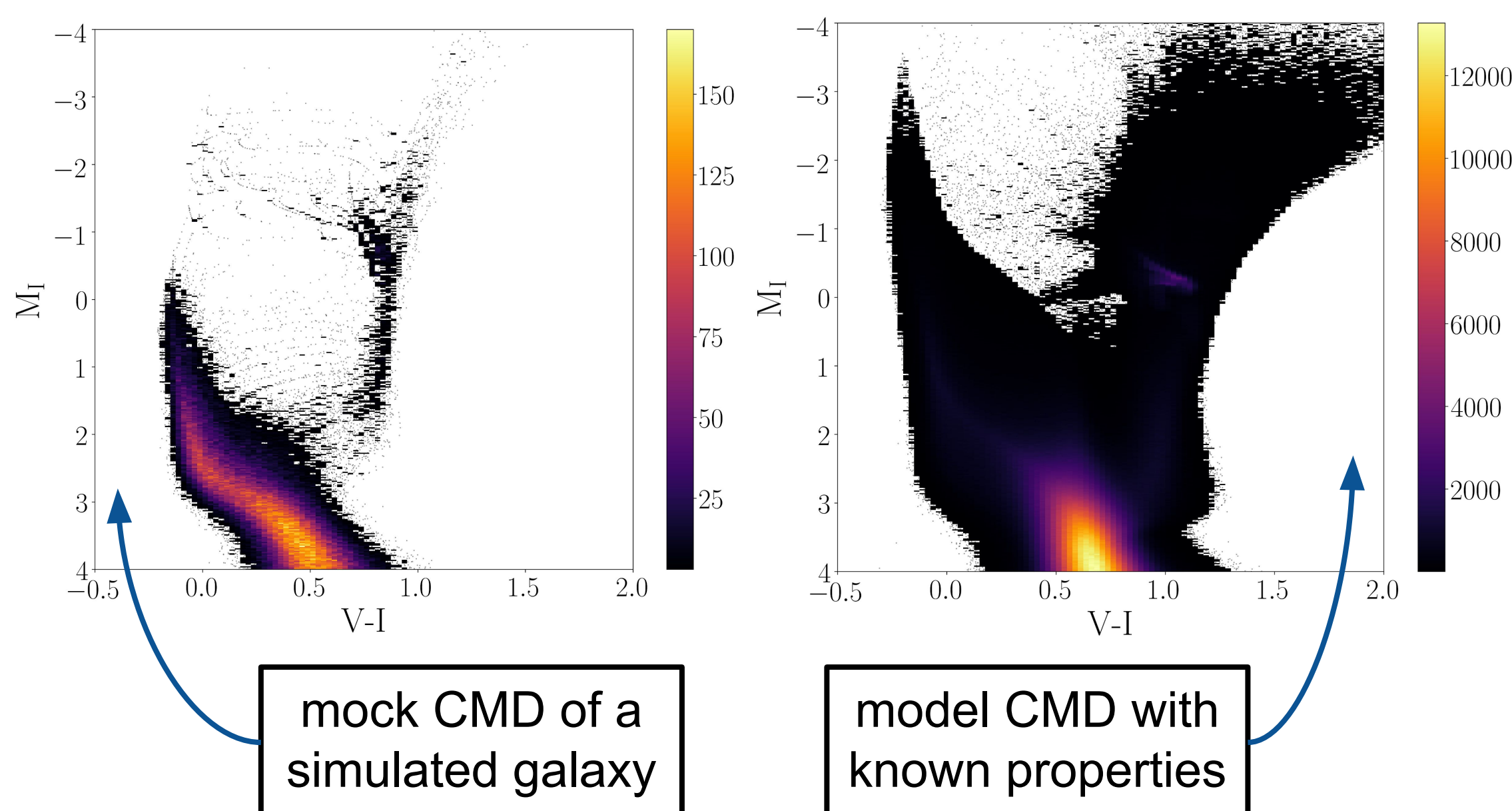
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### SMALL SCALE, BIG PROBLEMS

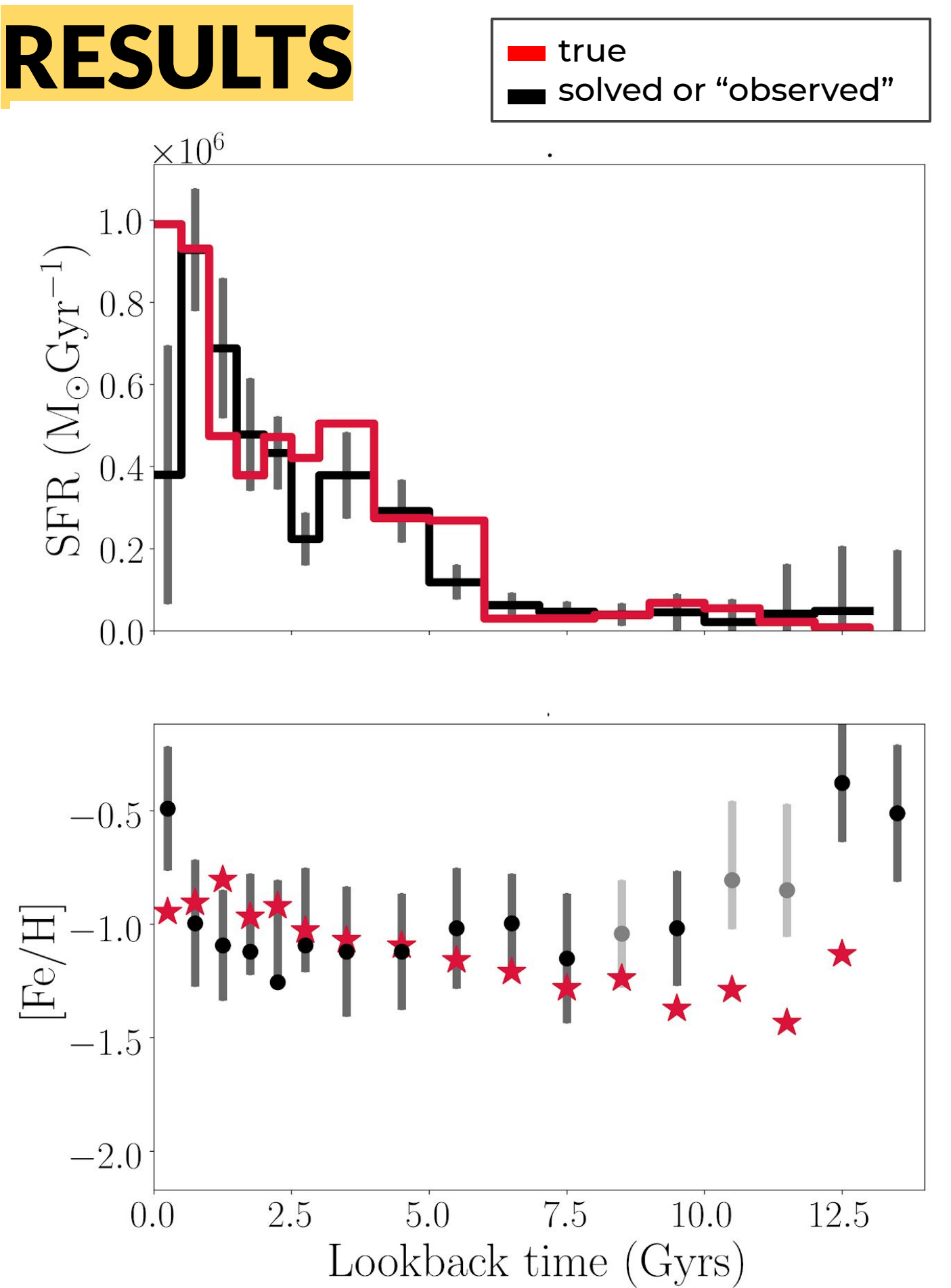
Several studies indicate tension between the currently accepted  $\Lambda$ CDM cosmological theory and observations, specially at the small, dwarf galaxy scale. This raises the question whether we are comparing the theory with the observations in a consistent way. We explore this question using realistic dwarf galaxy simulations.

### METHOD

Applying the same tools (color-magnitude diagrams or CMDs) and same method (synthetic-CMD technique) to analyze high-resolution dwarf galaxy simulations.



### RESULTS



### CONCLUSIONS

- We find virtually no systematic differences between simulations and their observations.
- Our results also indicate that since different bands have sensitivity towards different stellar populations, the choice of bands in synthetic CMD method should be tailored to the stellar population of interest.

