

Do AGNs enhance the escape of ionizing radiation from high redshift dwarf galaxies?

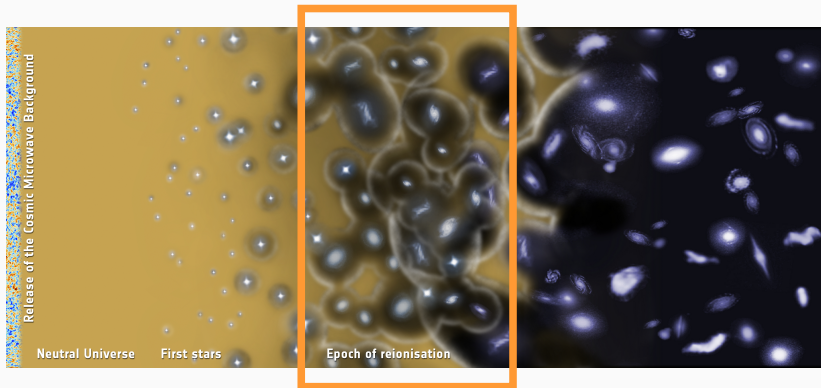
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with Marta Volonteri, Yohan Dubois, Piero Madau

November 17, 2017



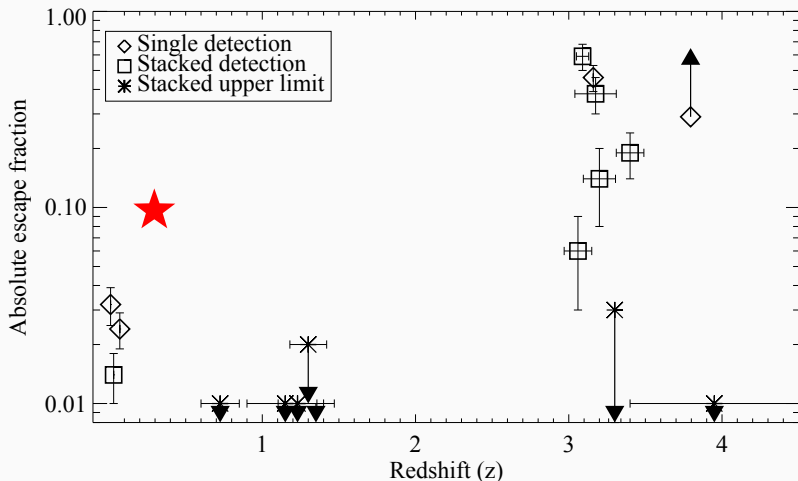
The Epoch of Reionisation



$z \sim 20 \rightarrow 6$

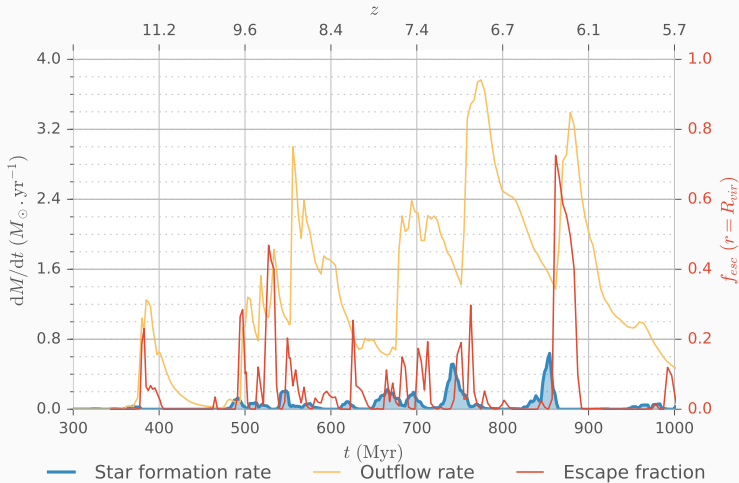
Escape fraction

Observational constraints on f_{esc}



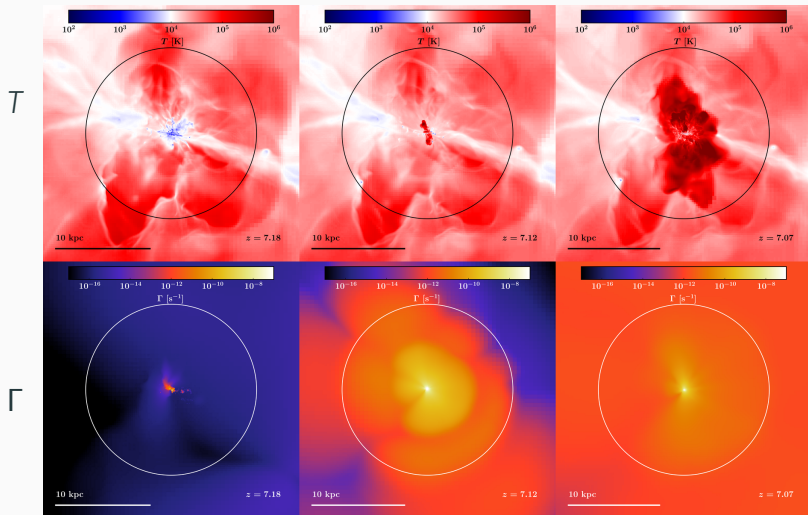
Feedback regulated escape of photons

Radiation escapes after the SN winds pierce the ISM



Feedback regulated escape of photons

Photons can escape during SN feedback events

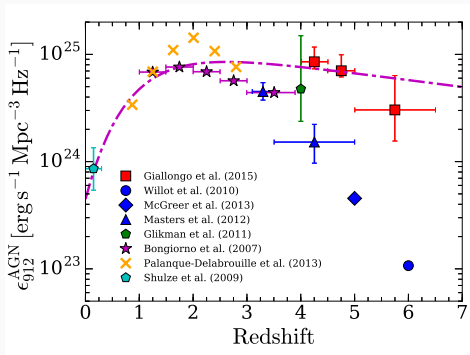


Take home message

Feedback regulates the escape of ionizing
radiation

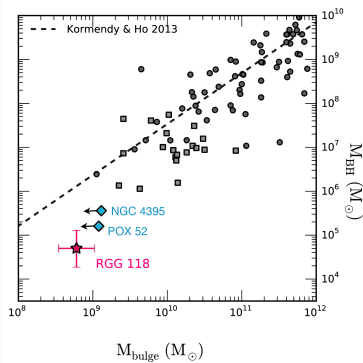
What about AGNs?

Higher AGN contribution to the UVB?



D'Aloisio+2016

SMBHs in dwarf galaxies

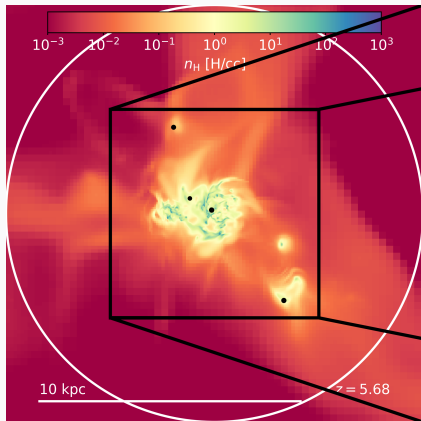


Baldassare+2015

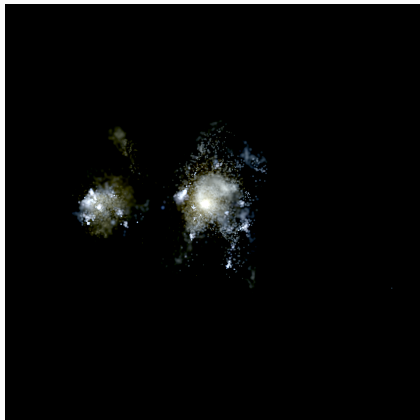
At the very least, we need to understand AGNs in dwarfs at high z.

New simulations

Gas distribution

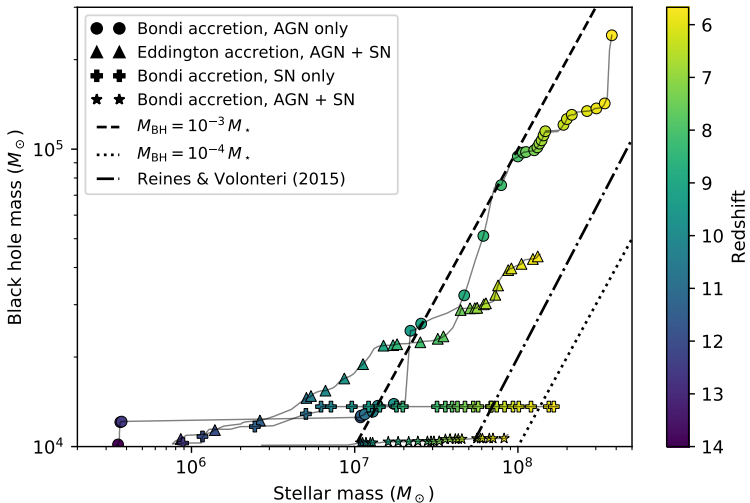


Stellar distribution



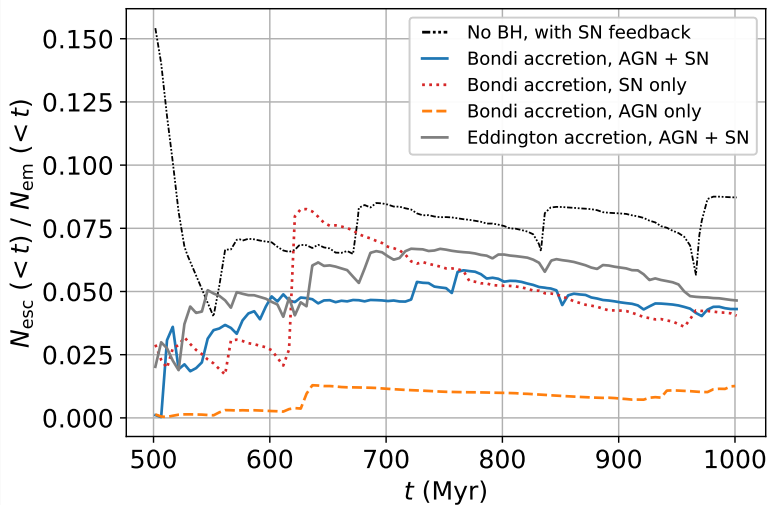
BHs do not grow

SN feedback prevents BH growth



Enhancement in f_{esc} ?

Not really: bursty behaviour dominated by SN feedback



SN feedback in small galaxies

- Bursts of star formation, followed bursty SN feedback
- Regulates the escape of ionizing radiation

BH in small galaxies

- They don't grow: SN feedback prevents gas feeding
- AGN feedback has a low effect on f_{esc}
- The AGN itself does not contribute much to the reionization

Contribution from the AGN

Largely subdominant, even in extreme cases

