

Markus R. Mosbech

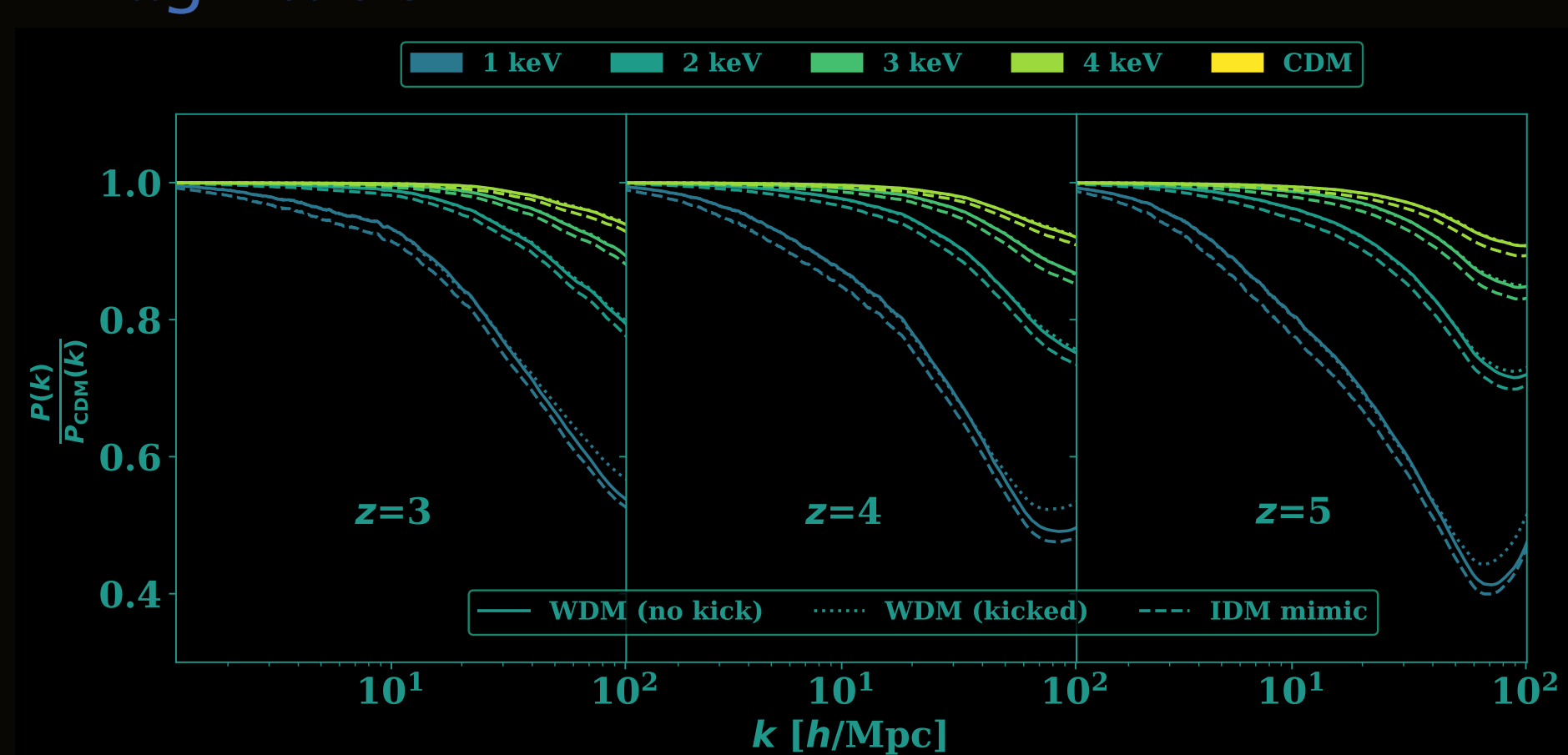
Supervisors: Celine Boehm & Yvonne Wong

Mixed (DM) Messages

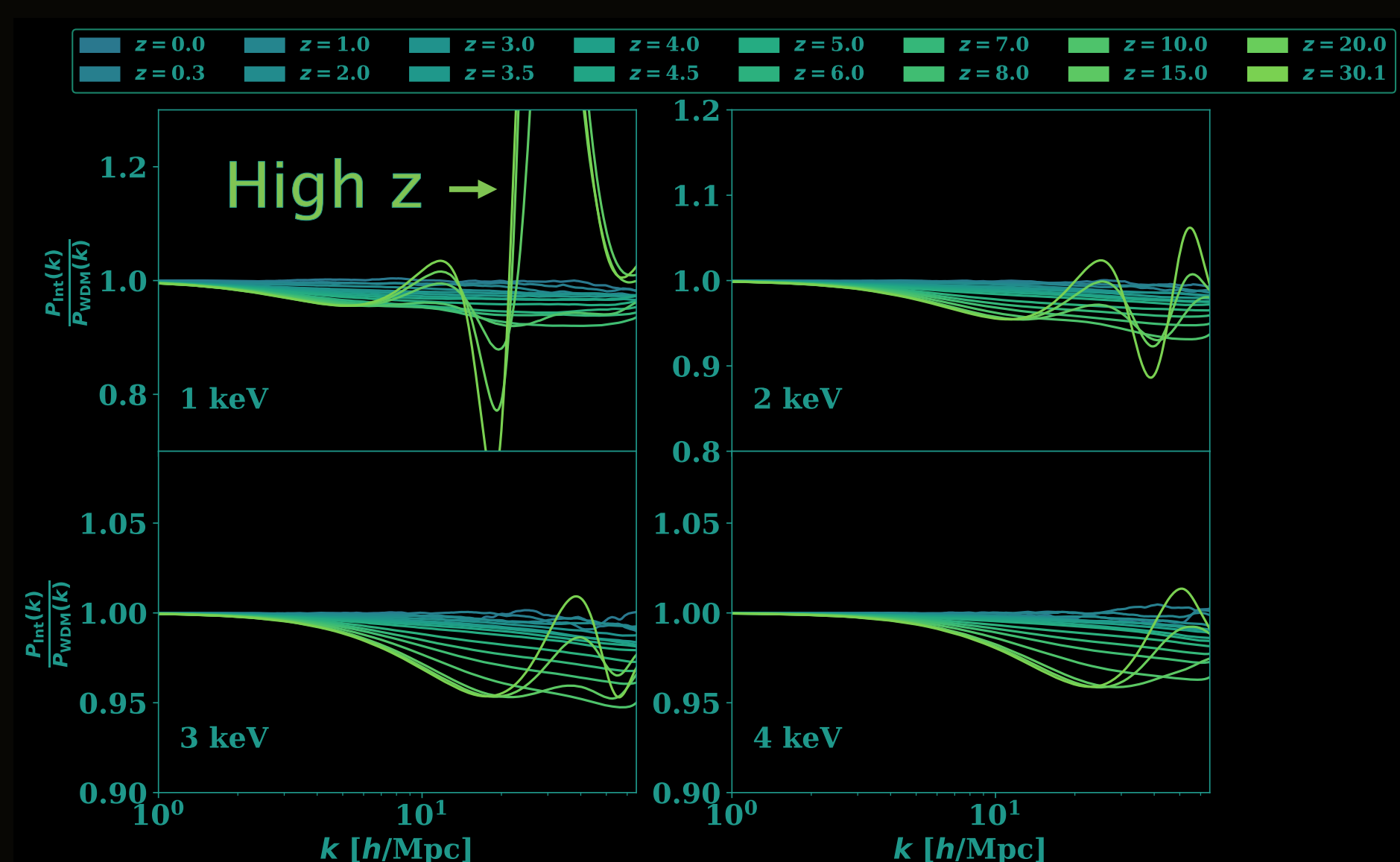
Constraining dark matter with astrophysical signals
(or lack thereof)

DM Interactions

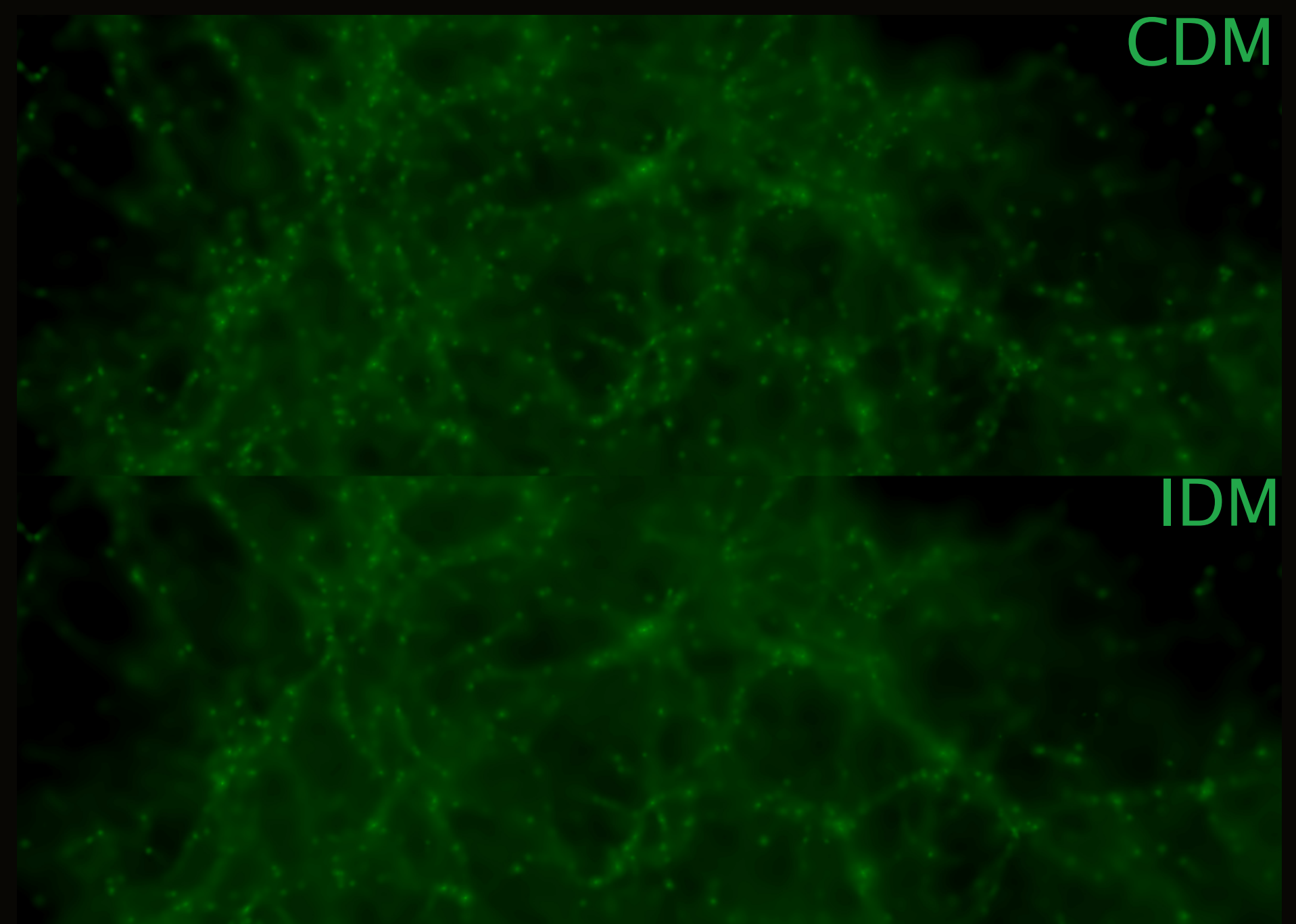
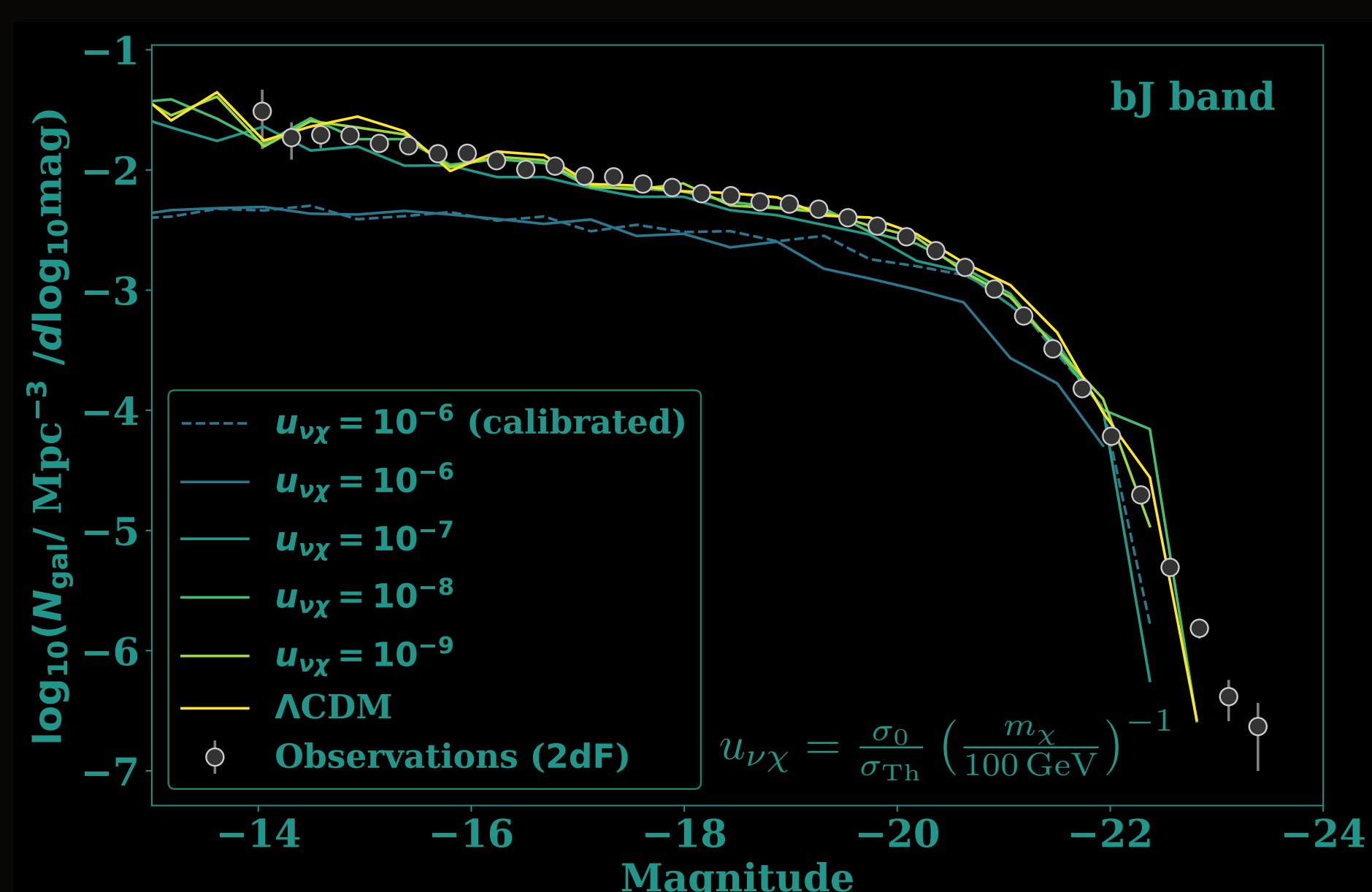
- WDM and IDM indistinguishable at 'low' z
- WDM forecasts for SKA apply to IDM
- Constraint is improved by 2 orders of magnitude



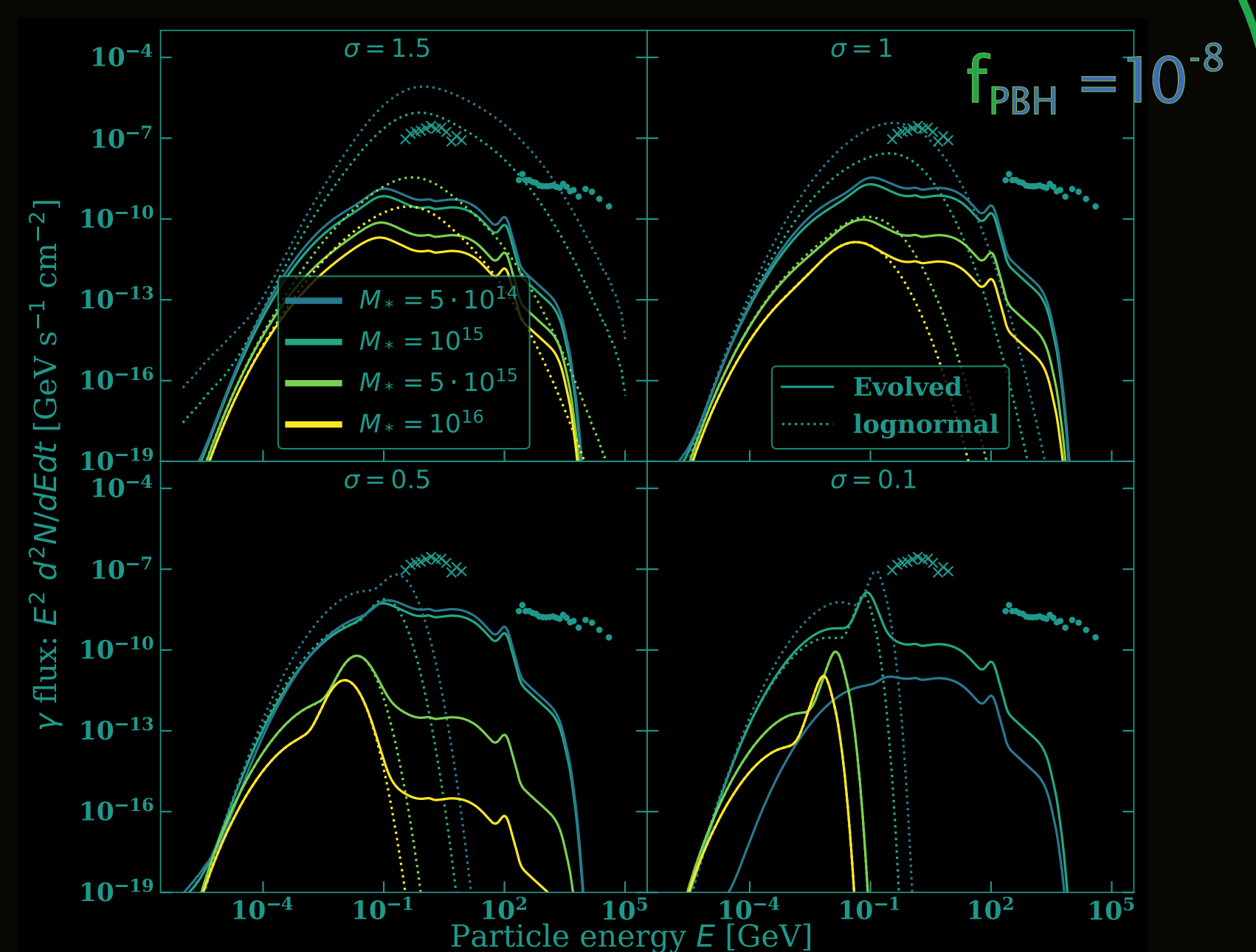
- $P_{\text{Int}}/P_{\text{WDM}}$ only shows difference at high z
- Few percent precision measurement of $P(k)$ at $z \gtrsim 15$ needed to distinguish WDM and IDM



- Galaxy luminosity function can rule out interactions larger than $u=10^{-6}$
- Rules out Ly- α preferred value



Alternative DM candidate: Primordial Black Holes



Local PBH constraints from emission must include time evolution.

Mass distribution changes over time, altering the shape of emission signal.

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