Background

I'm using the wind scalings from Muratov et al. [2015], with modifications from Davé et al. [2016] (the MUFASA simulations). I need a wind velocity ($v_{\rm w}$) and mass-loading factor (η) for the parameterized model.

The FIRE wind velocity scalings follow,

$$v_{\rm w} = 0.854 v_{\rm c}^{1.12}, \tag{1}$$

where $v_{\rm c}$ is the circular velocity of the galaxy. We use the results of Mo et al. [1998] to calculate $v_{\rm c}$,

$$v_{\rm c} = (M_{\rm b}/102.329{\rm M}_\odot)^{0.26178}(H(z)/H_0)^{1/3}, \tag{2}$$

where $M_{\rm b}$ is the baryonic mass of the galaxy, and $H(z)$ is the Hubble function. I end up with an average circular velocity of $v_{\rm c} \approx 327\,{\rm km/s}$. Using the average $v_{\rm c}$, I calculate an average wind velocity of $v_{\rm w} \approx 538\,{\rm km/s}$.

Next, I need a mass loading factor, η. The FIRE scalings give,

$$\eta = 3.55\left(\frac{M_*}{10^{10}{\rm M}_\odot}\right)^{-0.351}, \tag{3}$$

where M_* is the stellar mass of the galaxy. I calculate an average mass-loading factor of $\eta \approx 3.13$ using my estimated stellar masses.

For the recoupling time, I follow Davé et al. [2016] and use 2% of the Hubble time at launch. This works out to $t_{\rm recouple} \approx 4.21\,{\rm Myr}$.

Summarized Results

$\eta = 3.13$
$v_{\rm w} = 538\,{\rm km/s}$
$t_{\rm recouple} = 4.21\,{\rm Myr}$

References

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