Simulation of giant molecular cloud formation in the barred galaxy M83 (NGC5236) using Enzo
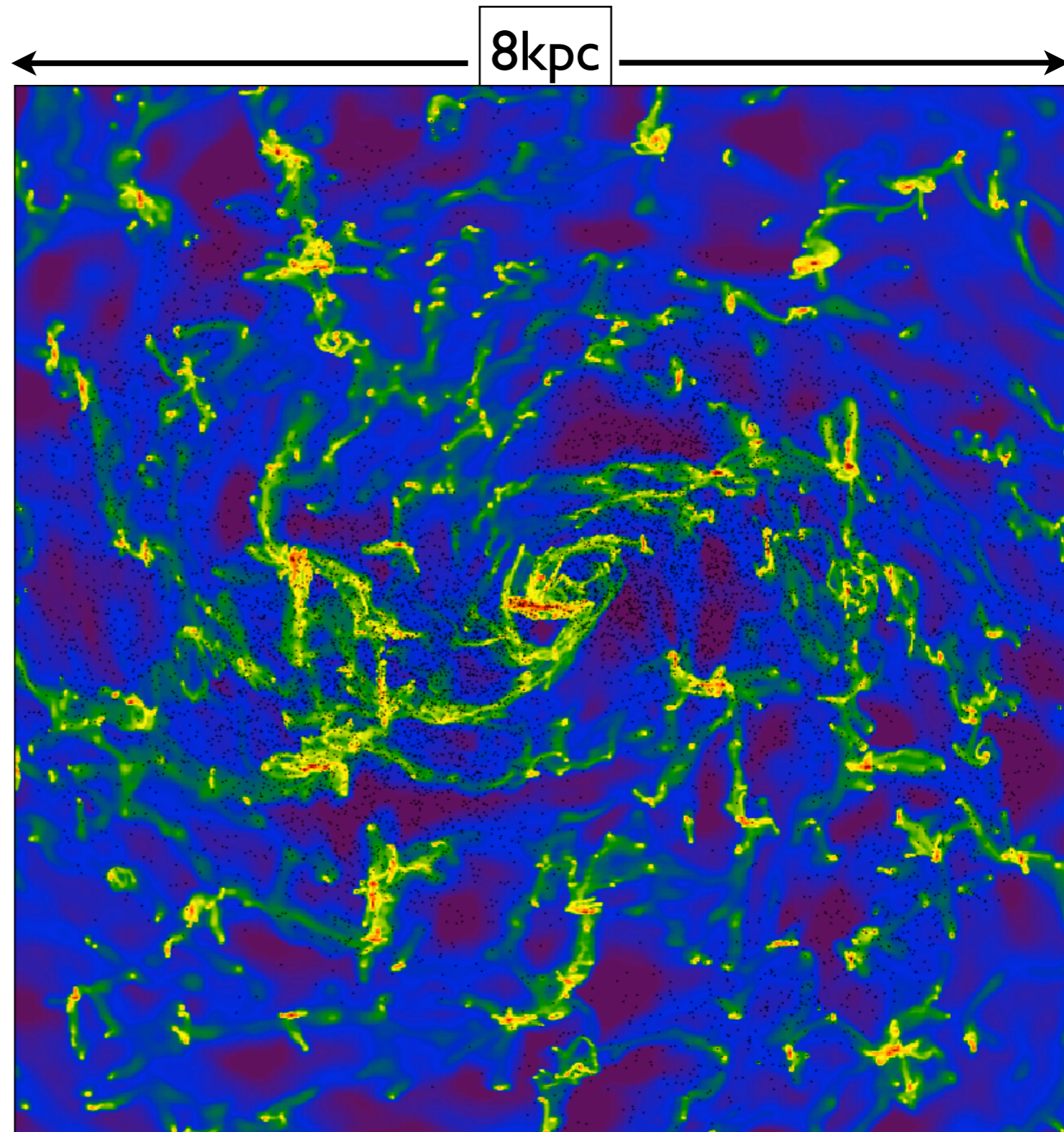
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Enzo : 3D AMR code

Size : $(50\,\mathrm{kpc})^3$ Root grid : 128^3

Minimum resolution : ~ **3pc** $(l = 7)$

Radiative cooling : T > 300K

$$\alpha_{\mathrm{vir}} \equiv \frac{5\sigma_{\mathrm{c}}{}^2 R_{\mathrm{c}}}{GM_{\mathrm{c}}}$$

spiral

bar

disc

fraction

virial parameter

8kpc

Surface density plot