## FUSIÓN DE HALOS — FUSIÓN NO COLISIONAL

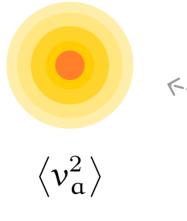
$$M_{\alpha}$$
 (Naab+2017)

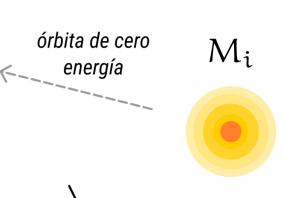
$$\mathsf{E}_{\mathsf{i}} = -\frac{1}{2}\mathsf{M}_{\mathsf{i}} \left\langle \mathsf{v}_{\mathsf{i}}^{2} \right\rangle = -\frac{1}{2}\frac{\mathsf{G}\,\mathsf{M}_{\mathsf{i}}}{\mathsf{r}_{\mathsf{i}}}$$

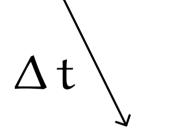
Sistema virializado

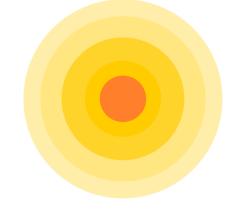
Incremento fraccional en masa  $\eta = M_{\alpha}/M_{i}$ 

Contraste fraccional en velocidad  $\qquad \epsilon = \left< v_{a}^2 \right> / \left< v_{i}^2 \right>$ 









$$\rho_{\rm f}/\rho_{\rm i} = \frac{(1+\eta\varepsilon)^3}{(1+\eta)^5} \quad \left\langle \nu_{\rm f}^2 \right\rangle / \left\langle \nu_{\rm i}^2 \right\rangle = \frac{1+\eta\varepsilon}{1+\eta} \quad r_{\rm f}/r_{\rm i} = \frac{(1+\eta)^2}{1+\eta\varepsilon}$$

Incremento en velocidad

Incremento radio

Incremento en densidad