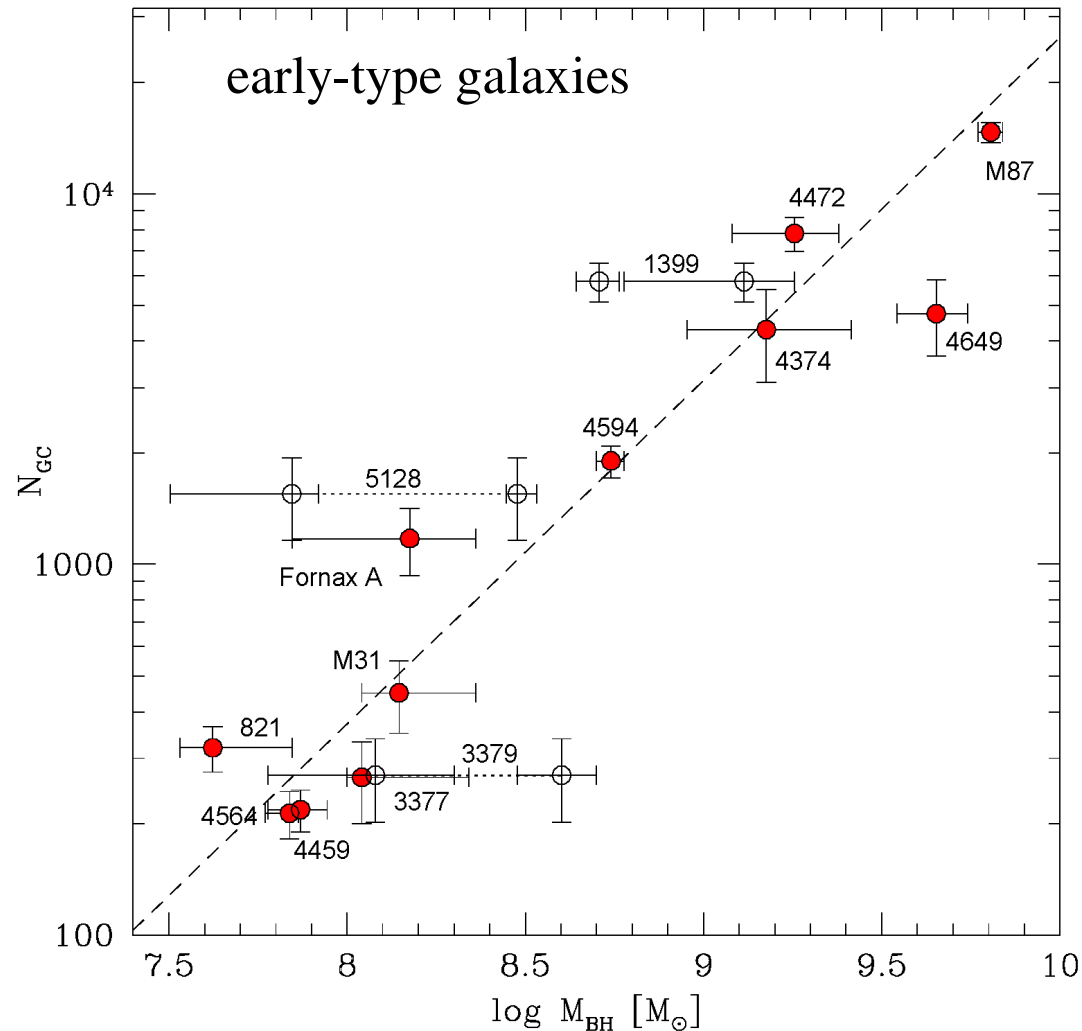


A Correlation between SMBHs and Globular Clusters

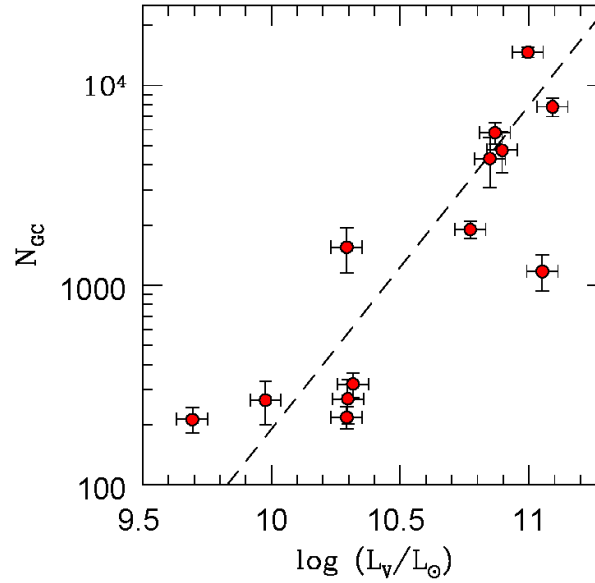
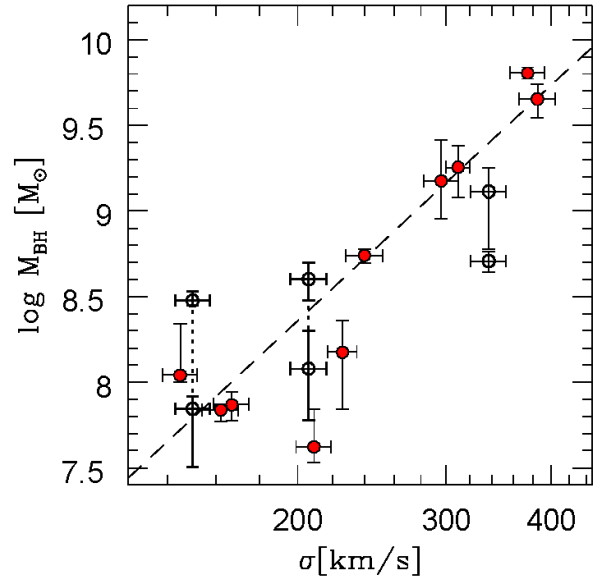
Burkert & Tremaine 2010, arXiv1004/0137



$$M_{\bullet} = m_{\bullet/*} \times N_{GC}^{1.1}$$
$$m_{\bullet/*} = 1.3 \times 10^5 M_{\odot}$$

Gültekin et al. (09)
Peng et al. (08)
Gebhardt

A Secular Correlation?



$$M_{\bullet} - N_{\text{GC}} : \chi^2 = 5.9$$

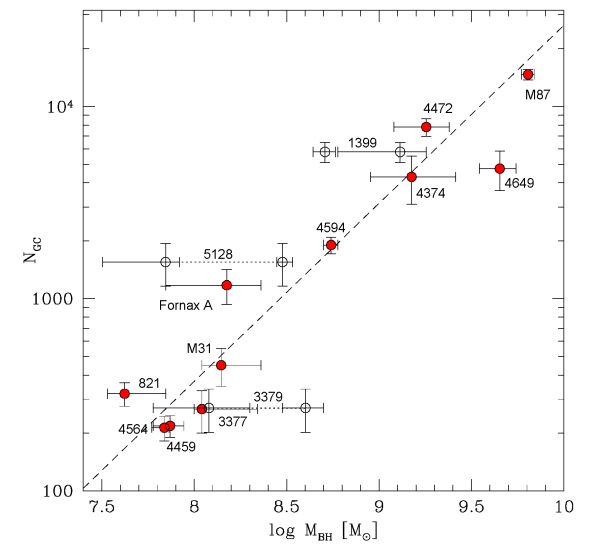
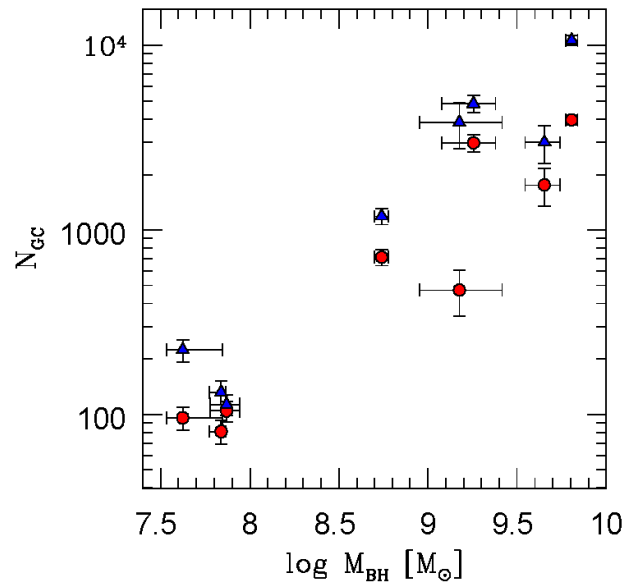
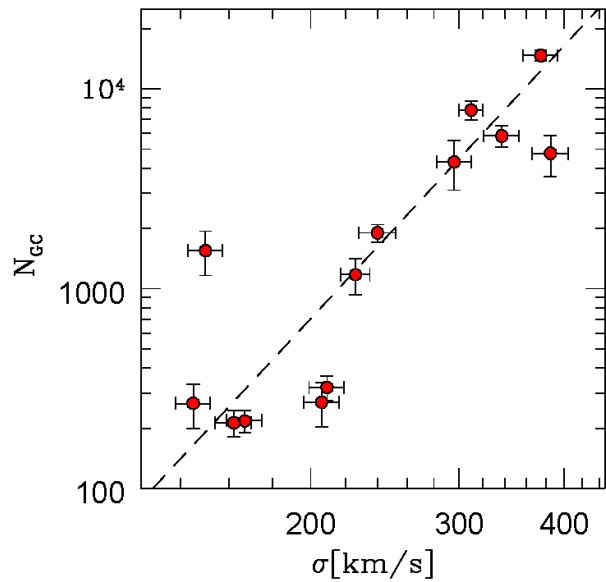
$$\varepsilon = 0.21$$

$$M_{\bullet} - \sigma : \chi^2 = 9.2$$

$$\varepsilon = 0.3$$

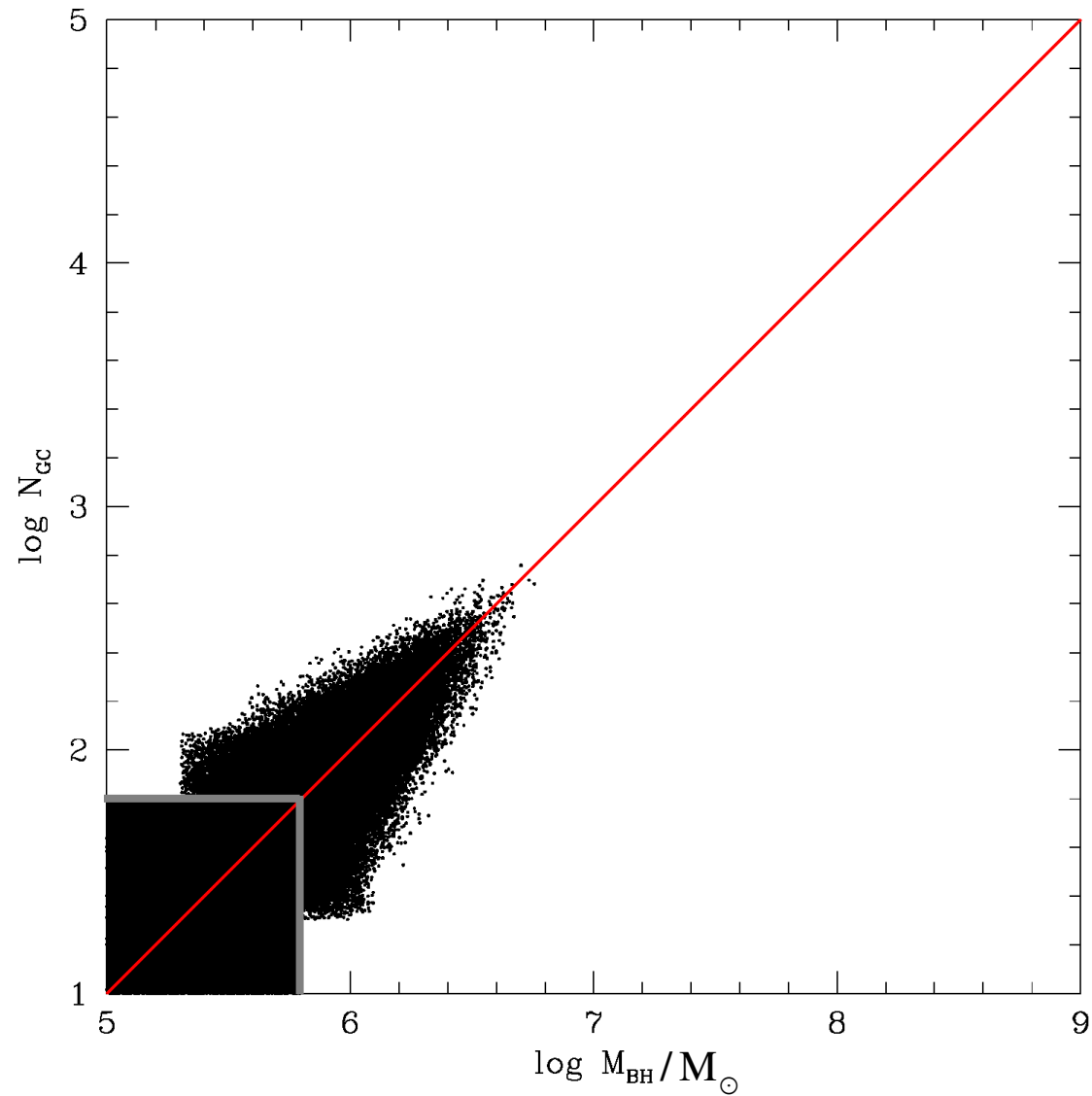
$$N_{\text{GC}} - L_V : \chi^2 = 35$$

$$\varepsilon = 0.38$$

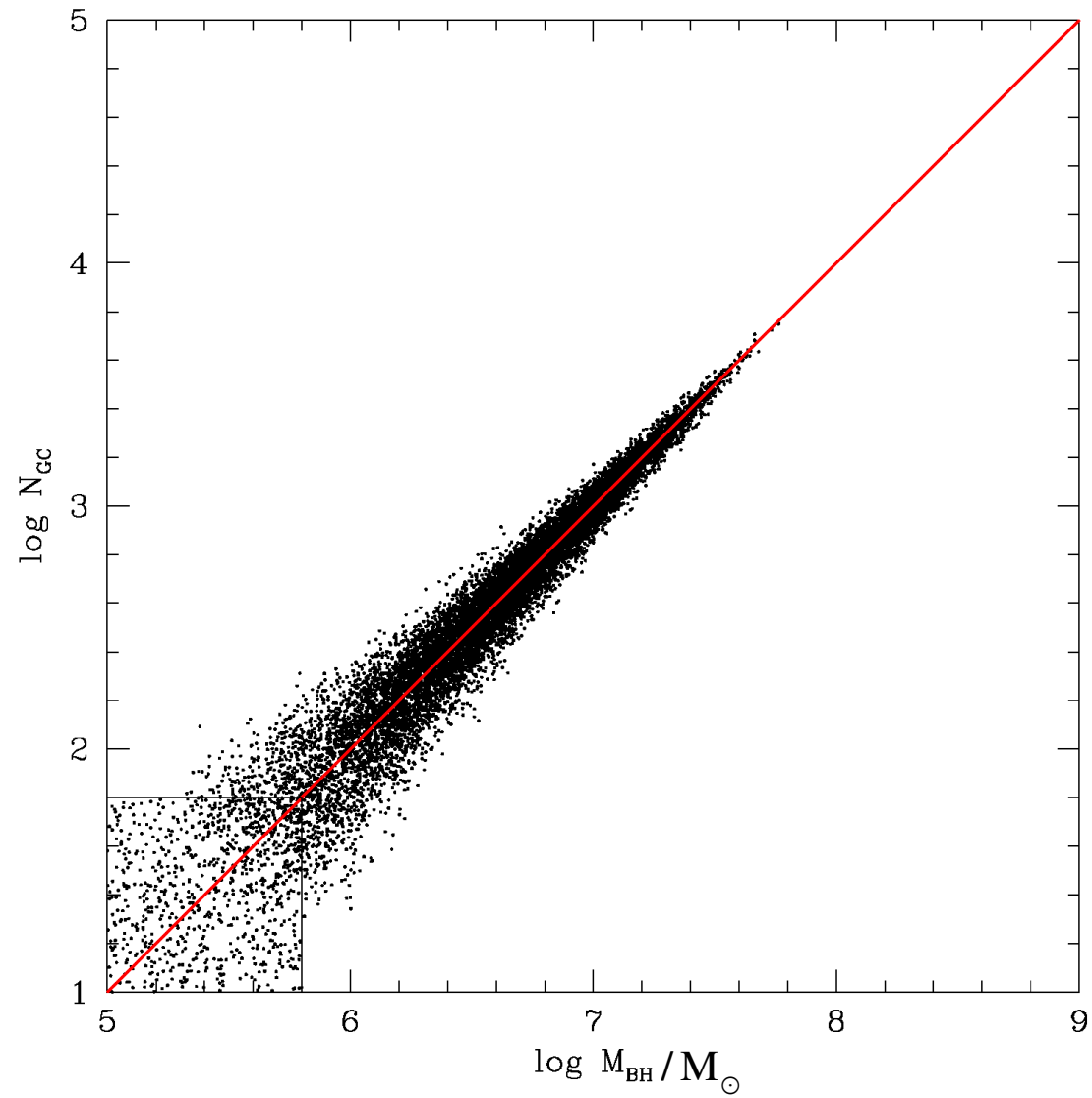


Origin: The Power of the Central Limit Theorem

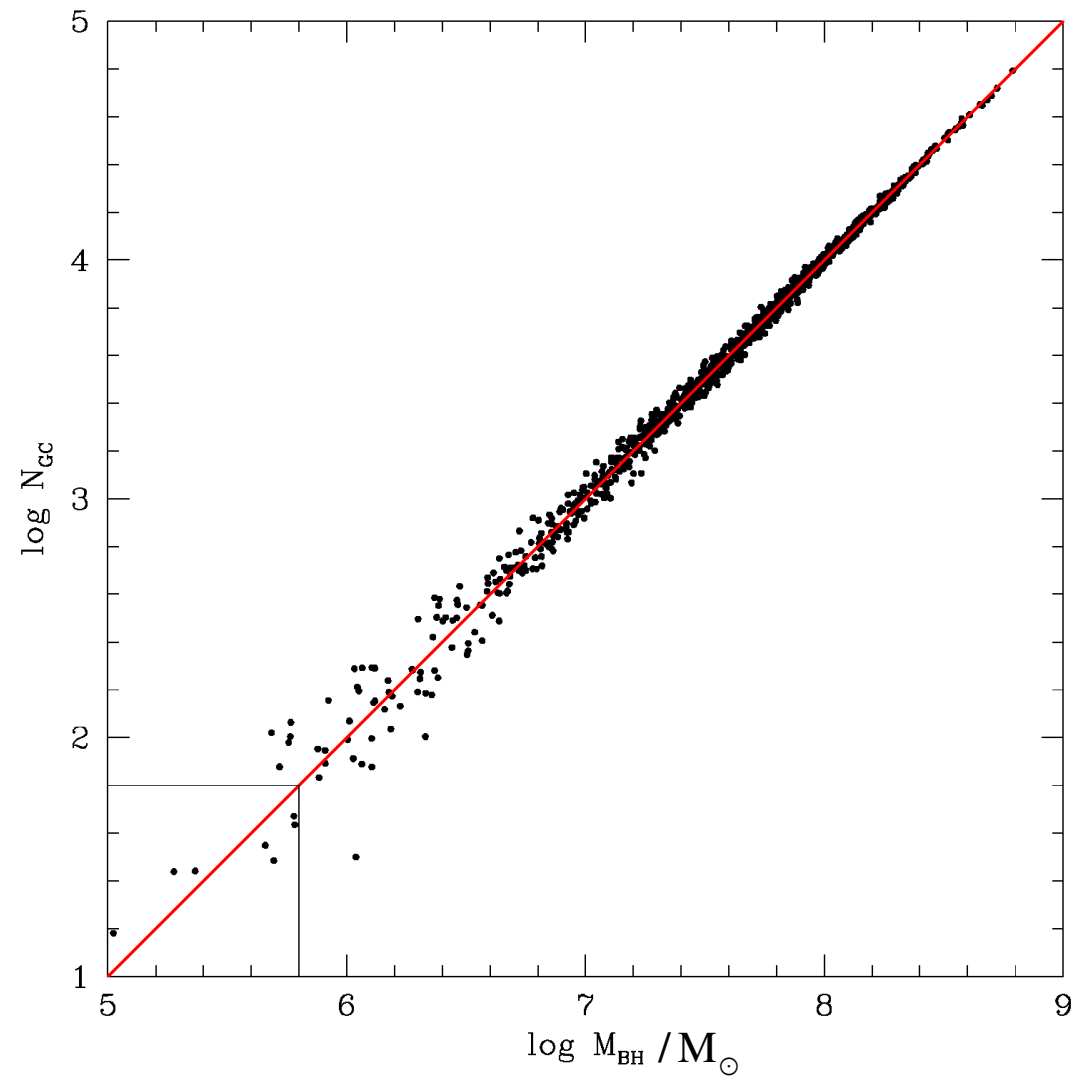
(Hirschmann et al. 10; Jahnke & Maccio 10)



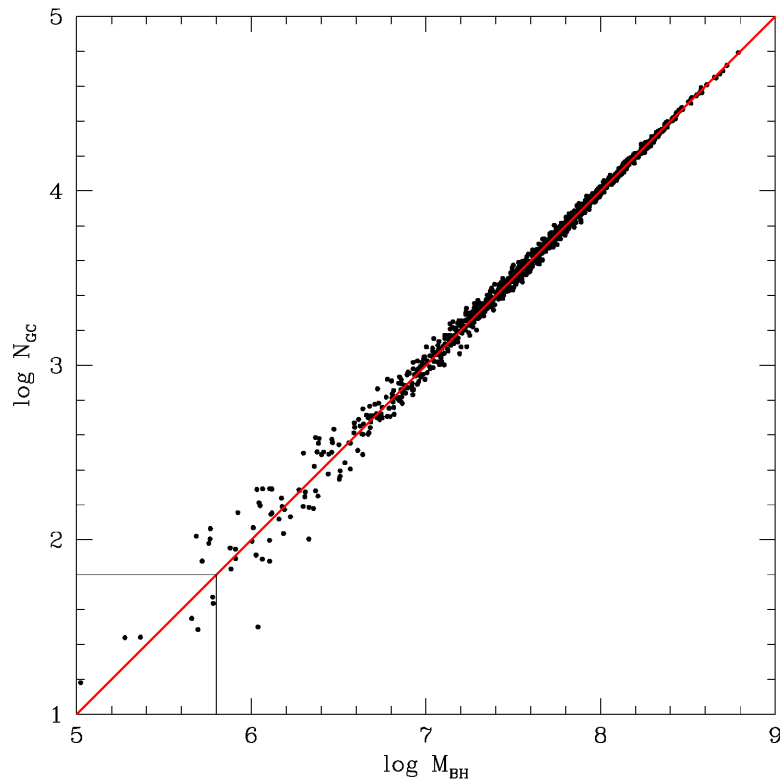
Origin: The Power of the Central Limit Theorem



Origin: The Power of the Central Limit Theorem



Implications



- For every GC on average one **seed BH** of similar mass formed.
- BH growth by **accretion** is negligible compared to **dry BH mergers**
- **Secular formation** of GCs is negligible
- **Disruption** of GCs by secular processes is negligible

