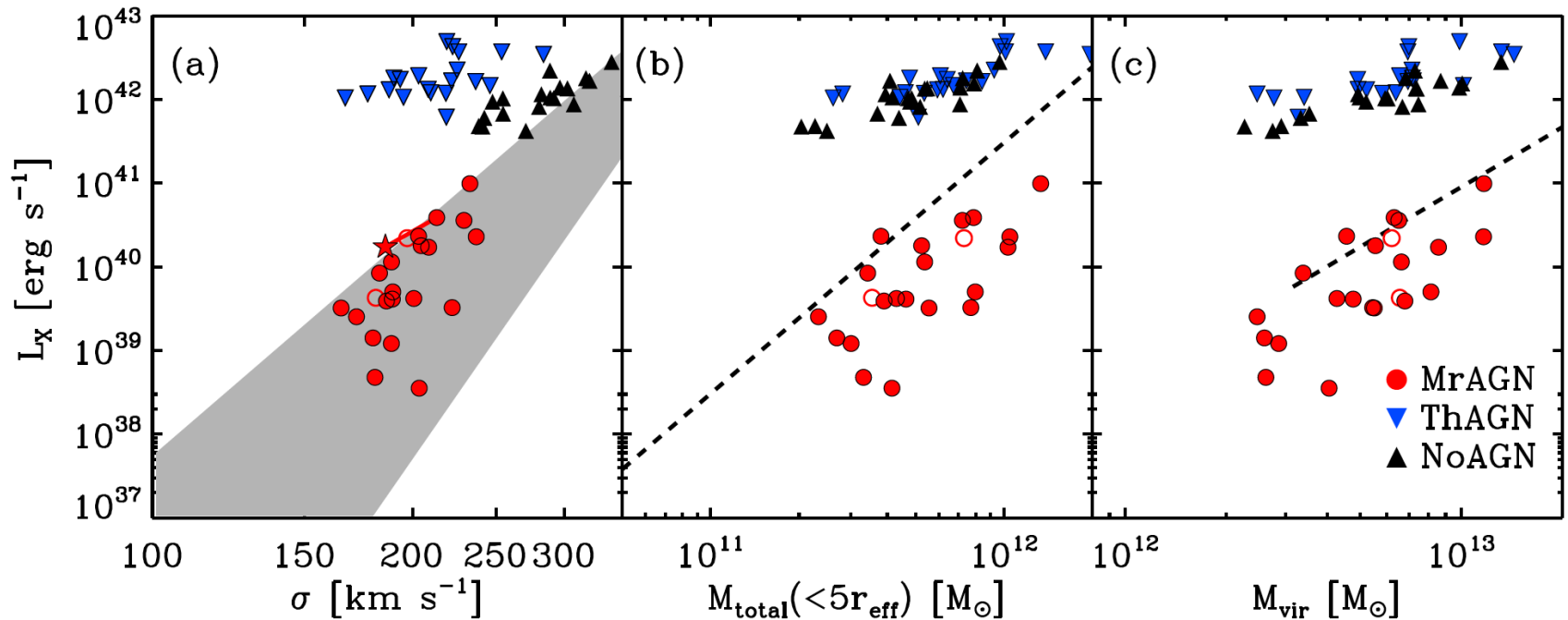


Feedback (galaxy-scale) is not understood

...only potential and plausible (sometimes implausible – Märchen?)
consequences of energy, momentum and radiation input, on galaxy
evolution... (empirical?)

... but we are boldly hopping along...

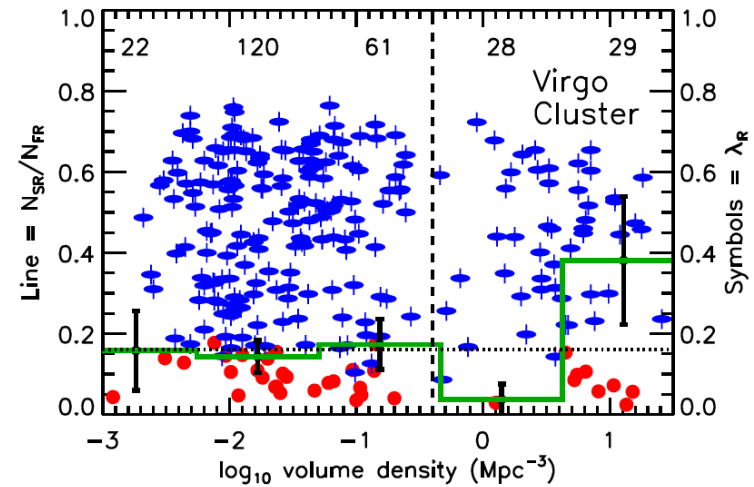
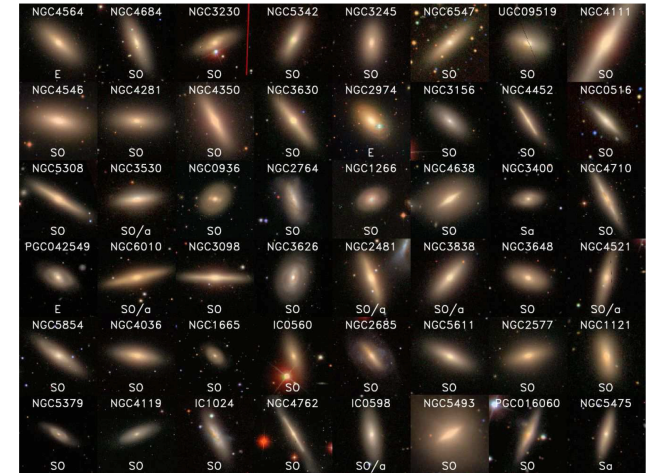
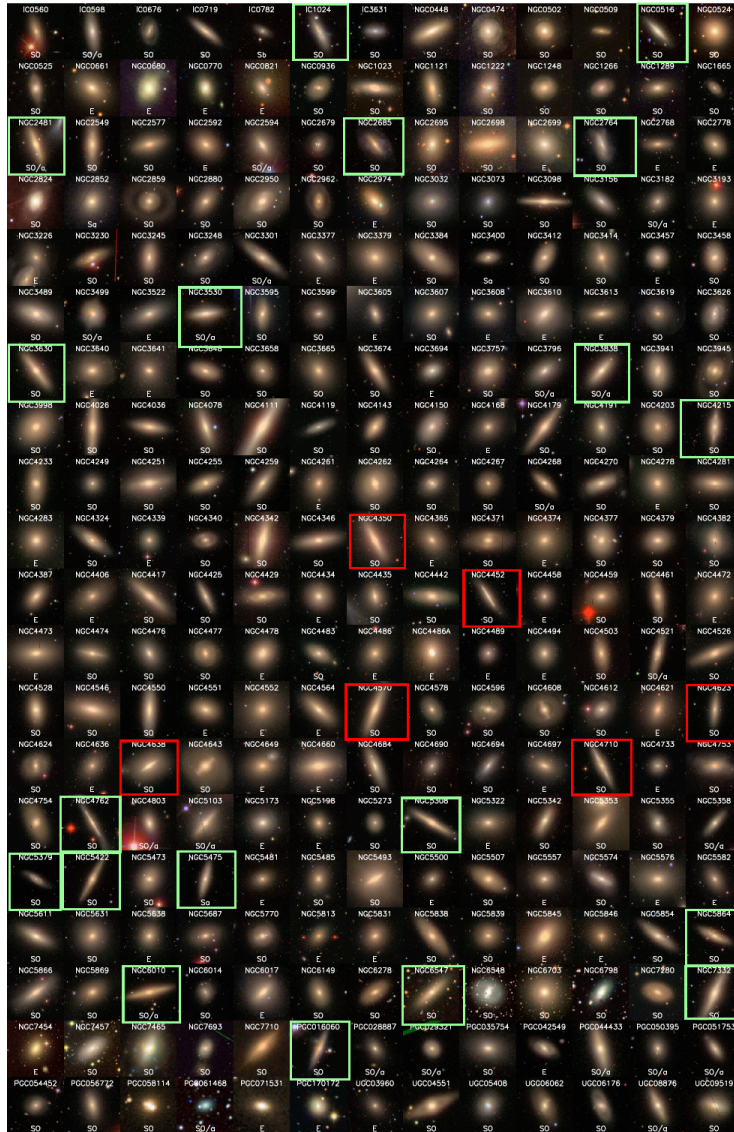
AGN feedback in cosmological simulations



It is possible to keep galaxies quiescent with AGN feedback but overestimate the X-ray luminosity

Cool gas goes into stars, hot gas, expelled by AGN? Treat simulations with care...

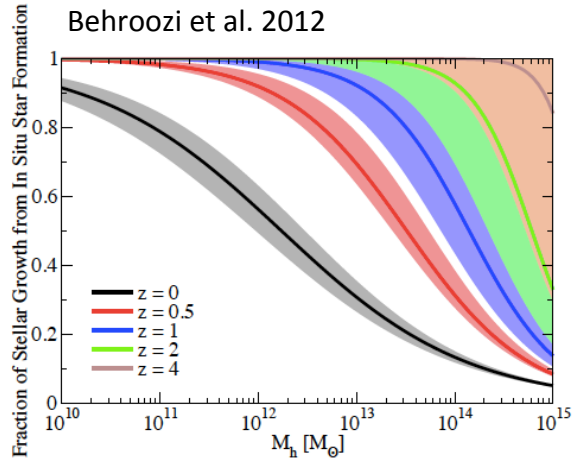
Which processes are quenching?



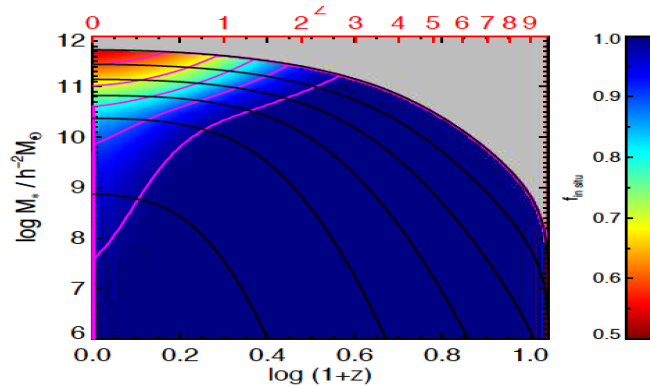
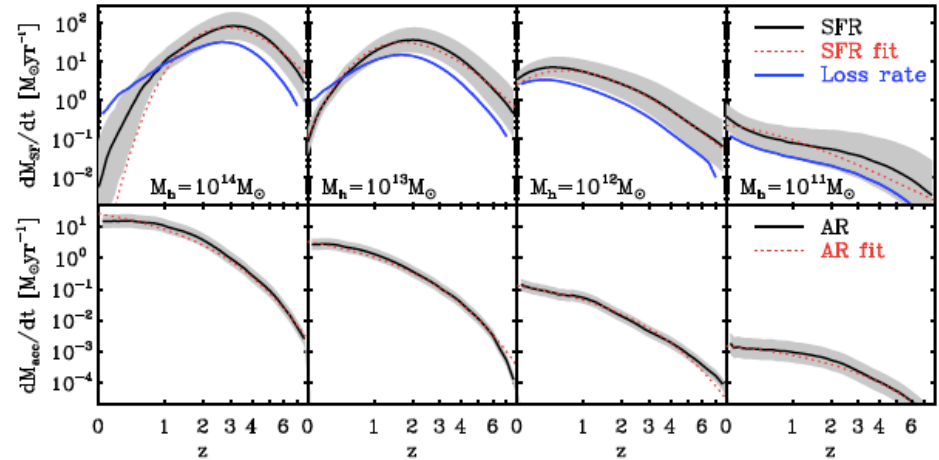
Eric Emsellem, this morning

Cappellari et al. ATLAS^{3D}

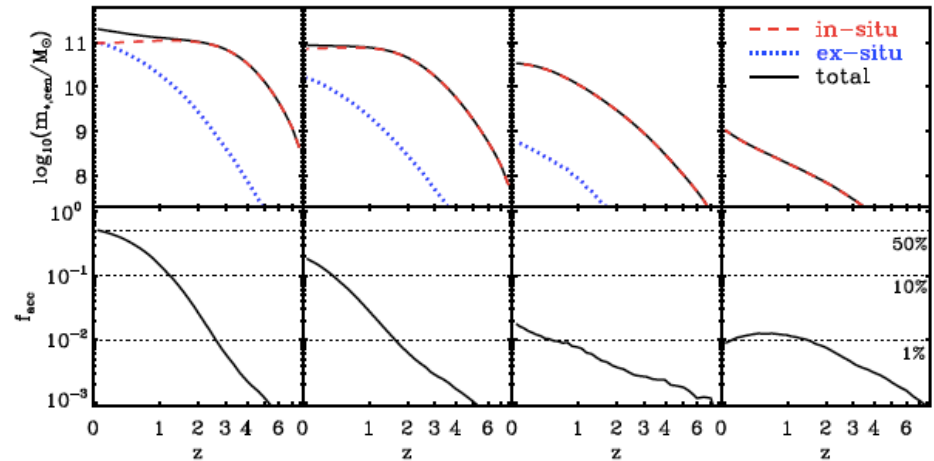
Constraints on in-situ vs. accreted from abundance matching



Mozer, Naab & White . 2013

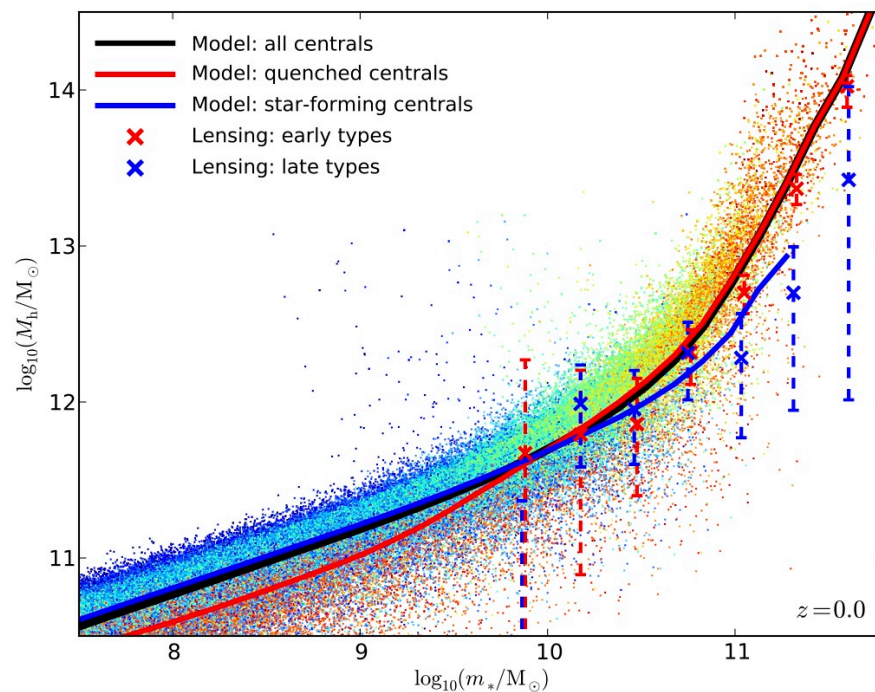
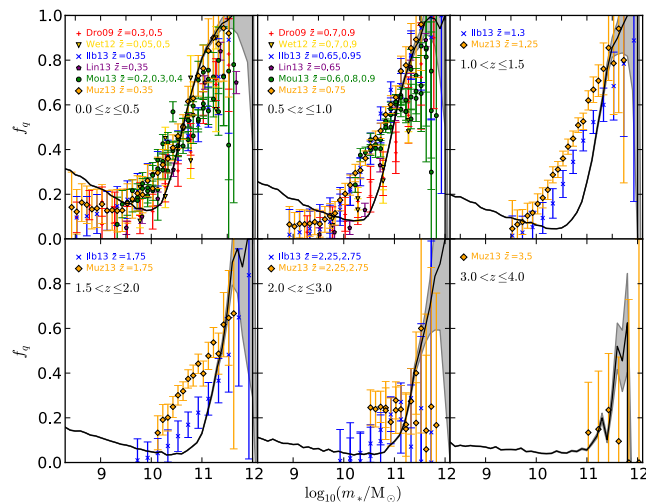
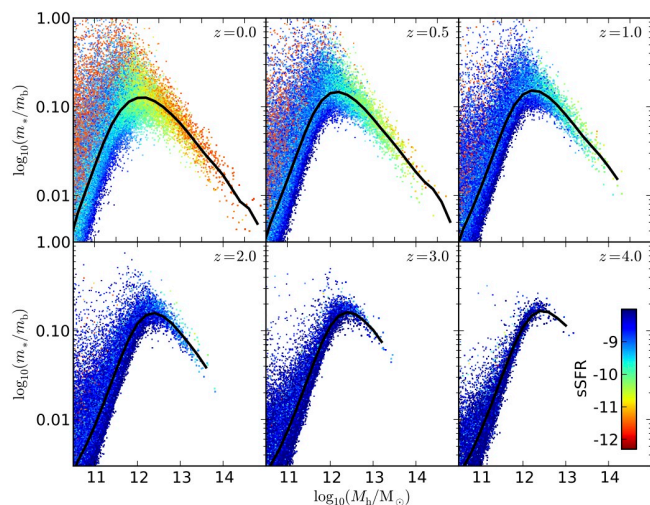


Yang et al. 2013



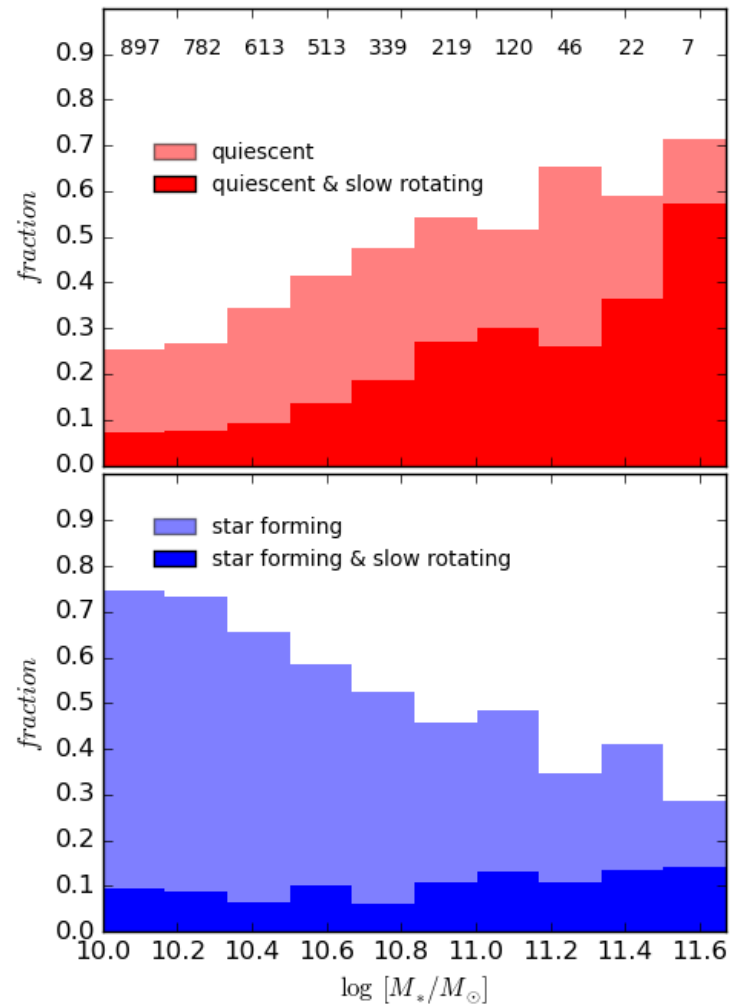
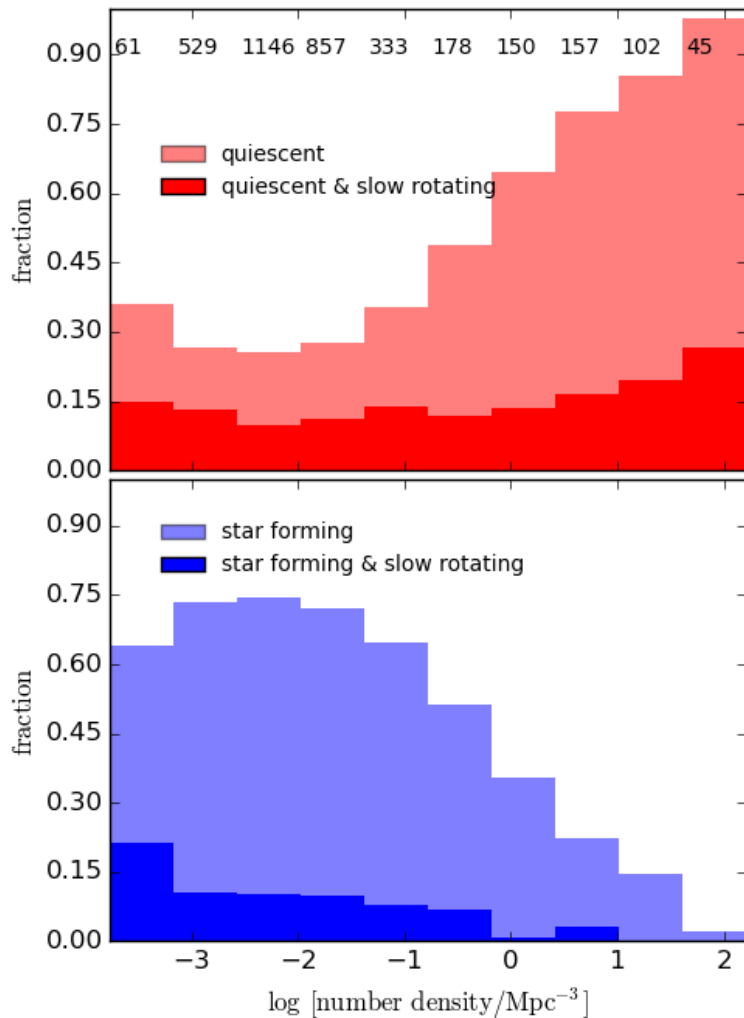
Collisionless major and minor mergers of 'spheroids' happen in massive galaxies below $z=2$. Per event major mergers change galaxy mass significantly, per unit of added mass minor merger change galaxy structure (size, mass-distribution, Sersic index, dark matter fraction) more dramatically (Hilz et al. 2012/2013)

Quenching and dark matter halos



Quiescent galaxies live in more massive dark matter halos.

Simulated Eagle galaxies: mass or environment?



- Mass and environment determine star formation properties
- Angular momentum decreases with mass