

21 January 2009, Osservatorio Astronomico di Capodimonte, auletta G. Piazzini

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### **On the origin of the scatter around the Fundamental Plane**

I will present the fundamental plane (FP) analysis of 141 early-type galaxies in the Shapley supercluster at  $z \sim 0.049$ .

The key feature of this sample is its coverage of low-mass galaxies down to  $\sigma \sim 50$  km/s. The origin of the intrinsic FP scatter is investigated by using estimates of age, metallicity and  $\alpha/\text{Fe}$ . We find that the FP residuals anti-correlate with the mean stellar age in agreement with previous work. However a stronger correlation with  $\alpha/\text{Fe}$  is also found. These correlations indicate that galaxies with effective radii smaller than those predicted by the FP have stellar populations systematically older and with  $\alpha$  over-abundances larger than average, for their  $\sigma$ . Including  $\alpha/\text{Fe}$  as a fourth parameter in the FP, the total scatter intrinsic scatter is reduced of about 50%. This result indicates that the distribution of galaxies around the FP are tightly related to the enrichment, and hence to the timescale of

star-formation. Our results appear to be consistent with the merger hypothesis for the formation of ellipticals which predicts that a significant fraction of the scatter is due to variations in the importance of dissipation in forming merger remnants of a given mass.