

## **An empirical picture of the evolution of galaxies from the COMBO-17 survey**

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**Abstract** I will present a detailed, empirical picture of the evolution of the galaxy population over the last 8 Gyrs, both in terms of its stellar population and in terms of its structural and dynamical properties. The results are based on ~30,000 faint galaxies with SEDs and redshifts ( $0.2 < z < 1.1$ ), drawn from the COMBO-17 survey, and complemented by structural parameters and morphologies for ~10,000 of these, drawn from the GEMS mosaic, the largest multicolor image with HST. Results include:

(1) The galaxy color distribution is bi-modal at all redshifts to  $z \sim 1$ , with not only the most massive, but also most luminous (V-band) galaxies being red; at all these redshifts the vast majority of "red sequence" galaxies is red because of a smooth, old stellar population, not because of dust.

(2) The colors, and the luminosity-size relation, of red sequence galaxies are consistent with passive fading; yet, the total mass of stars in early type galaxies doubles since  $z \sim 1$ .

(3) At intermediate redshifts ( $z \sim 0.5$ ) about half of all luminous galaxies with blue star-burst spectra are clearly mergers. I will also present preliminary results on the evolution of the merger rate and on the size function of galaxies.