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# The growth of mass and metallicity in bulges and disks: CALIFA perspective

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**Abstract.** CALIFA (Calar Alto Legacy Integral Field Area) is a 3D spectroscopic survey of 600 nearby galaxies that we are obtaining with PPaK@3.5m at Calar Alto (Sánchez *et al.* 2012; Husemann *et al.* 2012). This pioneer survey is providing valuable clues on how the mass and metallicity grow in the different galactic spatial sub-components ("bulge" and "disk"). Processed through spectral synthesis techniques, CALIFA datacubes allow us to, for the first time, spatially resolve the star formation history of galaxies (Cid Fernandes *et al.* 2012). The richness of this approach is already evident from the results obtained for the first $\sim$ 100 galaxies of the sample (Pérez *et al.* 2012). We have found that galaxies grow inside-out, and that the growth rate depends on a galaxy's mass. Here, we present the radial variations of physical properties sorting galaxies by their morphological type (Figure 1). We have found a good correlation between the stellar mass surface density, stellar ages and metallicities and the Hubble type, but being the the early type spirals (Sa-Sbc) the galaxies with strong negative age and metallicity gradient from the bulge to the disk.

**Keywords.** galaxies; stellar populations; structure; evolution

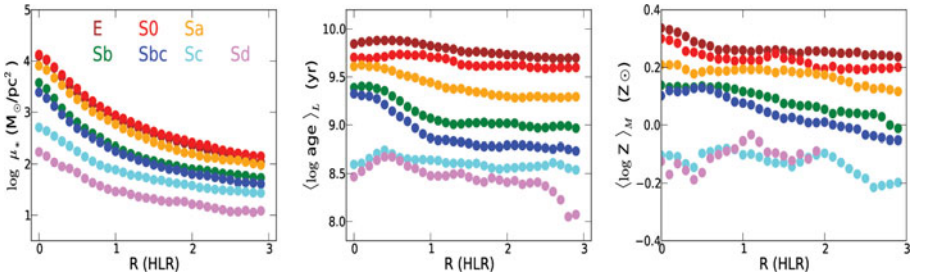


**Figure 1.** Stellar mass surface density *(left)*, the luminosity-weighted mean stellar age *(middle)*, the mass-weighted mean stellar metallicity *(right)*, radial profiles of 107 galaxies that are stacking by their morphological type.

## References

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