PROCEEDINGS OF SCIENCE

Structure of visual and dark matter components of spiral galaxies at z ~ 1

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Using Hubble Space Telescope images we derive luminosity profiles for spiral galaxies at z = 0.5 - 1. The luminosity profiles of disks show a tendency to decrease much faster than exponentially at outer radii, possibly indicating disk truncation. Combining the photometric data with rotation curves, we construct self-consistent mass distribution models for these galaxies, consisting of three components: a bulge, a disk and an isothermal dark matter halo. The uncertainties and the low resolution of the spectra of galaxies at these redshifts do not allow to prefer any specific dark matter distribution. For isothermal dark matter halos the central densities are 0.017 - 0.062 $M_{\odot}/pc^3$ at mean redshift z ~ 0.9, showing no significant evolution with redshift. With k-correction applied, the mean value for mass-to-light ratios of visible matter at z ~ 0.9 is 2.3, also indicating no significant evolution.

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