Multi-component structural decompositions of S4G galaxies

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Our sample is the Spitzer Survey of Stellar Structure in Galaxies (S^{4}G; PI Sheth), which consists of 2300 nearby galaxies observed at 3.6 and 4.5 mum wavelengths. We use GALFIT/GALFIDL to decompose the 2D surface brightness distributions of all these galaxies at 3.6 μm to multi-component structures. Bulges are fitted with a Sérsic function, disks with an exponential function, and bars either with Sérsic of Ferrers functions. When needed bright nuclei were fitted with PSF. All decompositions were individually checked, and in some cases many trials were made in order to find reasonable solutions. Our fitting approach is introduced, and the advantages and disadvantages of these decompositions are discussed. Some applications of the obtained decompositions are shown. Also, some morphological analysis beyond these decompositions are discussed.