Title:	Galaxy And Mass Assembly (GAMA): The unimodal nature of the dwarf galaxy population
Authors:	Mahajan, Smriti (/jspui/browse?type=author&value=Mahajan%2C+Smriti)
Keywords:	Galaxy And Mass Assembly (GAMA) galaxy population Galaxies: dwarf Galaxies: evolution
Issue Date:	2015
Publisher:	Oxford University Press
Citation:	Monthly Notices of the Royal Astronomical Society, 446 (3) pp. 2967-2984.
Abstract:	In this paper we aim to (i) test the number of statistically distinct classes required to classify the local galaxy population and (ii) identify the differences in the physical and star formation properties of visually distinct galaxies. To accomplish this, we analyse the structural parameters - effective radius (Reff), effective surface brightness within Reff (〈μ〉e), central surface brightness (μ0) and Sérsic index (n) - obtained by fitting the light profile of 432 galaxies (0.002 < z ≤ 0.02; Viking Z band), and their spectral energy distribution using multiband photometry in 18 broad-bands to obtain the stellar mass (M*), the star formation rate (SFR), the specific SFR (sSFR) and the dust mass (Mdust), respectively.We show that visually distinct, star-forming dwarf galaxies (irregulars, blue spheroids and low-surface-brightness galaxies) form a unimodal population in a parameter space mapped by 〈μ〉e, μ0, n, Reff, SFR, sSFR, M*, Mdust and (g - i). The SFR and sSFR distribution of passively evolving (dwarf) ellipticals on the other hand, statistically distinguish them from other galaxies with similar luminosity, while the giant galaxies clearly segregate into star-forming spirals and passive lenticulars.We therefore suggest that the morphology classification scheme(s) used in literature for dwarf galaxies only reflect the observational differences based on luminosity and surface brightness among the apparent distinct classes, rather than any physical differences between them
Description:	Only IISERM authors are available in the record.
URI:	https://academic.oup.com/mnras/article/446/3/2967/2891838 (https://academic.oup.com/mnras/article/446/3/2967/2891838) http://hdl.handle.net/123456789/3122 (http://hdl.handle.net/123456789/3122)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/3122/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/12345

Show full item record (/jspui/handle/123456789/3122?mode=full)

(/jspui/handle/123456789/3122/statistics)