

### [GC-13] A study of blue compact dwarf galaxies at $z=0.2\sim0.6$ and its mass-metallicity relation using SDSS DR7

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We present a catalogue for  $\sim 500$  blue compact dwarf galaxies (BCDs) at  $0.2 < z < 0.6$  using photometric & spectroscopic data of SDSS DR7.

The measured emission line intensities were corrected for both reddening and the effects of underlying stellar absorption based on the balmer decrement measurements. We derived elemental abundances from  $n_{\text{H}}$  abundances based on the classical Balmer line method and the empirical method. The electron number densities and electron temperatures are derived from  $n_{\text{H}}[\text{S II}] \lambda 6717/\lambda 6731$ ,  $[\text{O III}]\lambda 4959, 5007/[\text{O III}]\lambda 4363$  ratio. Stellar masses of galaxies are determined by Starburst99 using the continua of optical spectra, and gas masses are from  $\text{H}\beta$  luminosity and helium mass fractions.

Based on these spectroscopic analysis, We discuss spectral characteristics and the mass-metallicity relation of BCDs.

### [GC-14] The integrated and internal UV-line strength relations of early-type galaxies

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Using far (FUV) and near (NUV) ultraviolet photometry from guest investigator programmes on the Galaxy Evolution Explorer (GALEX) satellite, optical photometry from the MDM Observatory and optical integral-field spectroscopy from SAURON, we explore the UV-line strength relations of the 48 nearby early-type galaxies in the SAURON sample. For the first time, identical apertures can be used for all quantities, avoiding aperture mismatch. We show that galaxies with purely old stellar populations show well-defined correlations of the integrated FUV-V and FUV-NUV colours with the integrated Mgb band  $\text{H}\beta$  absorption line strength indices. Correlations with the NUV-V colour and Fe5015 index are at best weak. These relations put stringent constraints on the origin of the UV-upturn phenomenon in early-type galaxies. Furthermore, we show that the (FUV-V)-Mgb relation originally discovered by Burstein et al. (1998), suggesting a positive dependence of the UV-upturn on metallicity, is a general feature of all galaxies. Outliers in the relations are due to galaxies with current or recent star formation. Furthermore, we explore the UV-line strength relations as a function of radius within individual galaxies and find a correlation between the FUV-NUV colour gradients and internal metallicity gradients based on Mgb line strength.