

Spectroscopic and Photometric Studies of Blue Compact Dwarf Galaxies III. High Resolution Spectroscopic Surveys

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We present high resolution spectroscopy using Cassegrain spectrograph and 1200 lines/mm grating equipped with MSSSO 74" Telescope for a sample of 75 blue compact dwarf galaxies (BCDs) and HII galaxies.

We present a $H\alpha$ velocity field atlas. 75 $H\alpha$ velocity fields from high resolution show that 62 galaxies have evidences of central rotation and 8 galaxies with no rotational evidences. And 16 galaxies show possibilities of existence of counter-rotating cores or components, and 10 galaxies have expanding super-shell or bubble structures.

40% of BCDs on our sample have evidences of interacting or merging. Especially, at least 30% of BCDs with well-defined elliptical outer envelope, BCD,N type show evidences of merging remnants like the existence counter-rotating cores, which suggests the dwarf galaxy merging is one of most important factors dwarf galaxy population evolution as well as star formation.

20% of our BCD sample have expanding super-shell or bubbles, or mass outflow. Star-burst driven mass loss seems to be common properties of transient event during 0.01 Gyr in star-burst dwarf galaxies.