

**R21b      A Spectral Energy Distribution Model for the Local Blue Compact Dwarf Galaxies**

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Blue compact galaxy (BCD) is often claimed to share some important characteristics with very young, primordial galaxies mainly because of its small size, low metallicity, and active star formation. However, except for a few rare objects like SBS 0335–052, we should keep in mind that there is a crucial difference between a genuine primordial galaxy and local BCDs: local BCDs generally have a significant amount of old stellar population. Even in a low metallicity galaxies like SBS0335, dust extinction is important (e.g., Takeuchi et al. 2002, ASJ annual meeting R17b, R18b), therefore we must consider the effect of dust in local BCDs.

In this study we modeled the spectral energy distribution (SED) of local blue compact dwarf galaxies, Virgo BCDs and NGC 1569. These BCDs have old stellar population, and consequently, contribution from dust formation by evolved stars cannot be negligible. We should note that the size of dust produced by evolved stars can be intrinsically a power-law (e.g., Dominik et al. 1989). Further, these grains have enough time to grow in the interstellar space, which also helps the dust size distribution to be a power law. On the contrary, dust grains from supernova have a discrete size distribution. We took into account these dust grains with different origin and calculated the dust reprocessing of UV photons in two-zone approximation. Our model not only reproduces the observed SEDs, but also it is consistent with chemical evolution of the galaxies.