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Investigating the Nature of Dwarf Spiral Galaxies SACHITHRA WEERASOORIYA, JACQUELINE DUNN, Midwestern State University — Several studies have proposed that dwarf elliptical / spheroidal galaxies form through the transformation of dwarf irregular galaxies. Early and late type dwarfs resemble each other in terms of their observed colors and light distributions (each can often be represented by exponential disks), providing reason to propose an evolutionary link between the two types. The existence of dwarf spirals has been largely debated. However, more and more recent studies are using the designation of dwarf spiral to describe their targets of interest. This project seeks to explore where dwarf spirals fit into the above mentioned evolutionary sequence, if at all. Optical colors will be compared between a sample of dwarf irregular, dwarf elliptical, and dwarf spiral galaxies. The dwarf irregular and dwarf elliptical samples have previously been found to overlap in both color and surface brightness profiles shape when limiting the samples to their fainter members. A preliminary comparison including the dwarf spiral sample will be presented here. Initial results indicate a potential evolutionary link that merits further investigation. Additionally, dwarf galaxies will be explored through the use of N-body simulations. The formation and stability of spiral structure present in dwarf disk galaxies will be explored using models built with GalactICS and evolved using Gadget 2.

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