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Classifying Dwarf Galaxies as Satellites BREAN PREFONTAINE, Drexel University — By studying the properties of galaxies in both voids and walls, we can learn how galaxy formation is influenced by environment. We focus on the properties of dwarf galaxies, which are more sensitive to environmental effects than massive galaxies. Being a void or wall galaxy can tell us about the large-scale environment around a dwarf galaxy. However, the small-scale environment of a dwarf galaxy can be explored through whether or not the dwarf galaxy is a satellite to a larger galaxy. I used the spatial distribution of brighter galaxies in SDSS to classify each dwarf galaxy as being a satellite galaxy with a single host, within a group of galaxies, or isolated. To look for a possible host around the dwarf galaxy, the dwarf galaxy had to be within the calculated virial radius of at least one of the nearby galaxies. All of the qualifying larger galaxies were treated as possible hosts for the dwarf galaxies. We found that roughly 82 percent of all void dwarf galaxies are isolated, 14 percent have a single host, and 4 percent have multiple possible hosts and most likely lie within a dense region. In contrast, only 70 percent of wall dwarf galaxies are isolated, 20 percent have a single host, and 10 percent have multiple possible hosts and most likely lie within a dense region.

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