Volume 13
Washington University Undergraduate Research Digest

Spring 2018

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Two large questions in Astrophysics are that of the nature of dark matter in the universe, and discrepancies in the standard model. The ADMX experiment, hosted at the University of Washington in Seattle, is using vacuum sealed resonant cavities cooled to a few milliKelvin to detect the decay of theoretical particles named "axions." These cavities are tuned to frequencies in the range of a few Gigahertz, in line with theoretical predictions about the nature of these proposed dark matter particles which would solve the inconsistencies in the standard model. As lower frequencies are ruled out, new hardware designed for higher frequencies is needed to continue the experiment. This research conducted over the summer develops a preliminary design for a Wilkinson combiner that would be used to combine signals from two different resonant cavities operating between 1-2GHz. Simulations of this combiner show how it behaves slightly differently between the low and high end of the spectrum, but not excessively so. 2.5-D models show a larger reflection coefficient as compared to simulations based on a schematic. This circuit element is part of a larger system of signal detection that, if a signal is detected at all, would effectively prove the existence of an axion particle. This particle would be fundamental in understanding the makeup of our universe, a large fraction of which is occupied by dark matter.