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CAST-CAPP Detector Project

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CAST-CAPP detector project is searching for dark matter axions, in the range of 21 to 25μeV, using tunable rectangular microwave cavities installed in the 43mm twin-bore, 9T, CAST dipole magnet. In December 2018, one of the four identical cavities was operated at constant frequency of ~5.40 GHz and obtained 135 hours of preliminary data with ~25 MHz bandwidth. Data processing and analysis procedure is being developed and latest results indicate a limit on the axion to photon coupling constant on the order of 10^-13 GeV^-1. In this talk, in addition to the details of first run, we will also present some of the hardware improvements, during current phase-2 commissioning, which will enable the examination of up to 500 MHz frequency range using all 4 phase matched cavities with piezo-tuners.

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