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Search for axion dark matter at IBS-CAPP

The axion is a well-motivated hypothetical particle resulting from the Peccei-Quinn mechanism, which is an elegant solution to the strong ⌧⌧ problem of quantum chromodynamics. Because of its nature, abundance in the Universe, and extremely weak coupling, it is also considered a promising candidate for dark matter, another big mystery of the Universe. Among many experimental techniques to detect the axion in the galactic halo, the technique using a microwave resonant cavity, the axion haloscope, is the most widely used one. The Center for Axion and Precision Physics Research (CAPP) of the Institute for Basic Science (IBS) has been searching for the axion mainly based on this approach. This talk presents the recent results of the axion search experiments in IBS-CAPP. Technical developments and plans to improve experimental sensitivity are also discussed.

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