

The Curse of the Bambino

History and Future of the Microwave Cavity Search for Dark Matter Axions

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After nearly four decades, the axion, a hypothetical elementary particle, still represents the best solution to the Strong-CP problem, i.e. why the neutron has a vanishingly small electric dipole moment. Should the axion exist, it is expected to be extremely light, and possess extraordinarily feeble couplings to matter and radiation, far beyond the reach of conventional particle physics experiments. Such very light axions would also have been produced abundantly during the Big Bang, and thus the axion represents a well-motivated dark matter candidate. This talk will describe the development of the world's most sensitive spectral radio receiver to detect the axion, and related searches for axions in the laboratory and from the Sun's burning core.