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Globular-cluster constraints on the axion-photon coupling

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We propose a novel way to seek eV-MeV axions in a globular cluster. Axions can be produced inside stars via the Primakoff process and photon coalescence, and subsequently, decay into two photons. In particular, the hot and dense plasma in the core of horizontal branch (HB) stars in globular clusters could produce eV-MeV axion efficiently. Future MeV gamma-ray telescopes might be able to detect photons from the decay of axions produced in those stars.

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