

Exploring axion dark matter through radio signals from magnetic white dwarf stars

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Axion as one of the promising dark matter candidates can be detected through narrow radio lines emitted from the magnetic white dwarf stars. Due to the existence of the strong magnetic field, the axion may be resonantly converted into the radio photon, when it passes through a narrow region in the corona of the magnetic white dwarf, where the plasma frequency is equal to the axion mass. We investigate the sensitivity of the future radio telescope to the signature from the nearby magnetic white dwarf, and compare it with the sensitivity to the neutron star.

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