

# Resonance detection of dark matter axions using a DC SQUID

Popov V.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

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## Abstract

© 2016, Pleiades Publishing, Inc. A method for detecting dark matter axions in which a dc SQUID serves as a detector is proposed. The SQUID is shown to be able to detect the magnetic field perturbations induced by its interaction with axions. The resonance signal appears as a current step in the SQUID current-voltage characteristic. The voltage of the step corresponds to the axion mass, while its height depends on the axion energy density in near-Earth space. The proposed method is aimed at detecting axions with masses  $m_a \lesssim 10^{-4}$  eV, which are of interest for both cosmology and particle physics.

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