Contribution ID: **1237** Type: **Oral**

Numerical simulation of the magnetization reversal within the RF-SQUID model with φ0 junction depending on the external magnetic field pulse

Monday, 30 October 2023 14:20 (15 minutes)

We consider a model of the superconducting quantum interference device (SQUID) with a single ϕ_0 junction based on the Landau-Lifshitz-Gilbert equations for the magnetization of the ferromagnetic layer and resistively shunted junction model for phase difference of ϕ_0 Josephson junction. Within this model, a phenomenon of magnetization reversal is studied in a wide range of parameters using the MPI-based parallel implementation of the numerical simulation procedure. It was revealed that the intervals of the magnetization reversal have a periodic structure which depends on the amplitude of the external magnetic field pulse and on the inductance of the SQUID. One expects that the results are of interest within applications in design and optimization of modern superconducting electronics and spintronics.

Primary author: BASHASHIN, Maxim (MLIT, Joint Institute for Nuclear Research)

Presenter: BASHASHIN, Maxim (MLIT, Joint Institute for Nuclear Research)

Session Classification: Mathematical Modeling and Computational Physics

Track Classification: Mathematical Modeling and Computational Physics