

DETERMINATION OF MICROWAVE SIGNAL FREQUENCY IN A SYSTEM OF THREE UNCOUPLED SPIN-TORQUE MICROWAVE DETECTORS

Typical frequency dependence of the output dc voltage generated by a spin-torque microwave detector (STMD) based on the magnetic tunnel junction is almost symmetric which makes difficult to determine microwave signal frequency using only one nanostructure. Previously it was shown that two STMDs can be used as a spectrum analyzer in the short range of frequencies between the resonance frequencies of the detectors. In this work we have developed the procedure that allows one to determine frequency of an external microwave signal in a wider range of frequencies. Both the calibration and the frequency determination procedures can be performed completely automatically and do not require any human analysis. The described method can be applied to an arbitrary number of STMDs (not less than 3) with minimal changes.

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