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Method for realization of a phi Josephson junction for a silent qubit

The Josephson junction having degenerate ground states implemented in the silent phase qubit may significantly improve its properties. We propose a method to realize a phi Josephson junction by combining alternating 0 and pi parts (sub Junctions) with an intrinsically nonsinusoidal current-phase relation (CPR). The second part of the talk will be devoted to the recent investigation of the induced magnetization in the ferromagnetic Josephson junctions appearing due to long-range triplet superconducting correlations and tuned by the Josephson current.

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