Abstracts

Dual mode patch superconductor cavity filters

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A new kind of dual mode filter consisting of high temperature superconductor (HTS) patch loaded circular cavity resonators is presented. The resonator is analyzed using full wave mode matching method. The generalized scattering matrices of the HTS patch loaded circular cavity are obtained. After performing cascading procedure and applying boundary conditions, resonant frequencies, field distribution, unloaded Q of the resonator and the coupling between two cavities through irises are obtained. Two 4-pole dual mode elliptic function patch conductor loaded cavity filters are designed, constructed and tested. Excellent measured frequency responses of the filter are obtained.

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