

Ac susceptibility of a thin type-II superconducting circular washer with and without a radial transport current

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In this paper, we have studied the ac susceptibility of a thin type-II superconducting circular washer subjected to a normal applied magnetic field in the absence and also in the presence of a transport radial current using the Bean critical state model in which the critical current density is assumed to be independent of the local magnetic field. The results of our calculations on the magnetic susceptibilities in the absence and in the presence of a radial transport current are compared with each other and also with the other existing theoretical works carried out using different methods^{1,2}.

¹Ali A. Babaei-Brojeny and John R. Clem, Phys. Rev. B 68, 174514 (2003)

²Mahdi Sohrabi and Ali A. Babaei-Brojeny, J Low Temp Phys. 161 395 (2010).