

Giant oscillations of coupling strength in Mo/Si multilayers with constant semiconductor thickness

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<https://doi.org/10.1103/PhysRevB.56.2372>

Abstract

We report the observation of anisotropy ratio γ and interlayer-coupling-strength oscillations with variation of metal-layer thickness in Mo/Si multilayer series with constant Si-layer thickness. These oscillations correlate with previously found oscillations of T_c , R_{300}/R_n , and $dH_{c\perp}/dT$. The giant amplitude of γ oscillations makes one believe that all oscillation effects are due to the variation of the Josephson coupling. The possible origin of these unusual effects is discussed.