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Interlayer coupling enhanced by the interface roughness: A perturbative method[1] CHING-HAO CHANG, TZAY-MING HONG, DEPARTMENT OF PHYSICS, NATIONAL TSING HUA UNIVERSITY TEAM — Previous experiment on Fe/Cr/FeΔ001Θ trilayers reported a surprising observation that the interlayer exchange coupling could be enhanced drastically by the bombardment of irradiation even at low fluences. We propose that it is due to the resonant states in the spacer made possible when the topography of both interfaces is correlated and exhibits prominent Fourier components. A systematic procedure is developed to handle the interface roughness and predict on how to optimize the interlayer coupling. This method can be extended to bridge the gap between theories and experiments in other heterojunctions.

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