

PHYSICS DEPARTMENT COLLOQUIUM

“Inelastic electron scattering
off magnetic impurities”

BY

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The talk reviews the theory of electron relaxation in metals with magnetic impurities. Such impurities enhance the energy exchange between electrons and make the electron relaxation sensitive to the magnetic field. The field-induced Zeeman splitting suppresses the electron energy exchange. By quenching the impurity spin fluctuations, magnetic field also helps restoring the electron phase coherence. The developed theory resolves the puzzle of fast electron energy relaxation in tiny wires made of certain metals. This intriguing phenomenon has been discovered within the last decade and continues to draw the attention of researchers.

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