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CFT approach to multi-channel SU(N) Kondo effect

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場所　：　本館 2 階　H284B　物理学系輪講室

概　要

In this seminar, I will talk about our recent analysis of the general multi-channel SU(N) Kondo effect from the conformal field theory (CFT) approach. The Kondo effect is a well known phenomenon in condensed matter physics as an enhancement of the electrical resistivity of impure metals with a decreasing temperature. Below the Kondo temperature, the scattering amplitude between a conduction electron near the Fermi surface and the impurity diverges owing to asymptotic freedom of the Kondo effect, and thus perturbative approaches breaks down. In order to investigate the Kondo effect in the infrared (IR) region below the Kondo temperature, we have to rely on some non-perturbative method. By using the CFT approach as a non-perturbative method, we successfully determine the IR behavior of several observables of multi-channel SU(N) Kondo effect, including the impurity entropy, specific heat, susceptibility and the Wilson ratio. I will also discuss an application of our method to quantum chromodynamics (QCD) Kondo effect which is recently proposed in high energy physics.

※セミナーは日本語で行われます。

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