



Contribution ID: 29

Type: **Talk**

Recoil corrections in antikaon-deuteron scattering

Monday, June 29, 2015 6:00 PM (15 minutes)

The recoil retardation effect in the K^-d scattering length is studied. Using the nonrelativistic effective field theory approach, it is demonstrated that a systematic perturbative expansion of the recoil corrections in the parameter $\xi = MK/mN$ is possible in spite of the fact that K^-d scattering at low energies is inherently nonperturbative due to the large values of the K^-N scattering lengths.

The first-order correction to the K^-d scattering length due to single insertion of the retardation term in the multiple-scattering series is calculated. The recoil effect turns out to be reasonably small even at the physical value of MK/mN approx 0.5. In the talk I will present these results as well as our more recent estimation of higher order corrections and the possibility to resum the recoil corrections to all orders.

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Session Classification: Parallel Session 2 -Few-Body Physics WG

Track Classification: Few-Body Physics Working Group