

Anti-kaons and Lambda (1405)

Tuesday, September 6, 2011 3:00 PM (30 minutes)

Properties and structure of the Lambda (1405) are interesting both in themselves and in the context of few-body and many-body nuclear states of anti-K mesons. One of the old problems is the place of Lambda (1405) in the quark models and related symmetries.

Another problem affecting the few body physics is related to the elastic anti-K nucleon scattering amplitude. The two approaches now put into practice of the few-body physics : the strong binding model and the chiral model approach are at this moment difficult to confirm or reject. This is related to one of old difficulties in this field –the kaon-nucleon amplitudes fixed in multichannel processes above the threshold become unstable when extrapolated below the threshold.

There are several, obvious, ways of improvement :

- 1) new precise experiments above the threshold
- 2) experiments related directly to the sub-threshold region
- 3) stabilization of the sub-threshold extrapolations of the semi- phenomenological models

I will try to compare several descriptions and discuss possible and perhaps impossible ways to study these points. Some chances of well known techniques will be discussed. In particular nuclear and radiative / atomic experiments. As far as the theory is concerned, I see a need to rely more on the analytical properties of the scattering amplitudes.

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Session Classification: Kaonic Atoms

Track Classification: Kaonic Atoms