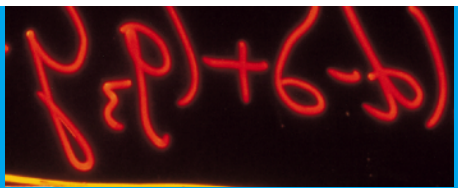
DESY
Particle and Astroparticle Physics Colloquium

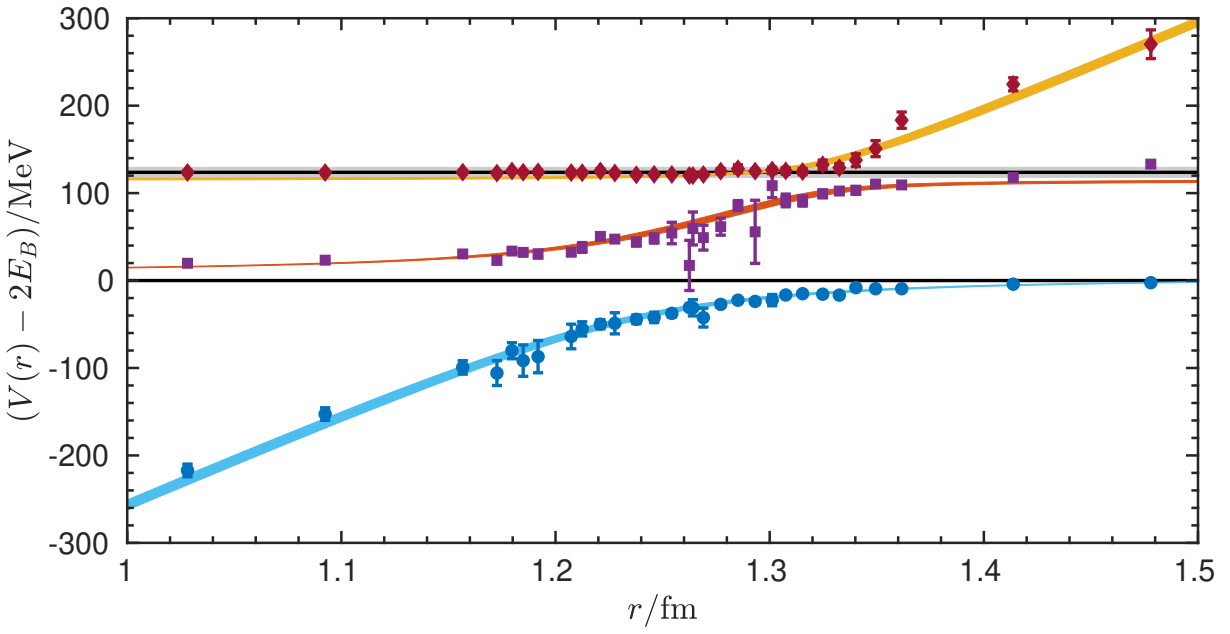


String breaking in N_f = 2+1 QCD.

Tuesday, 11 July, 2023
Auditorium & Webcast 16:00 h

Francesco Knechtli (Universität Wuppertal)

The potential between a static quark and a static anti-quark as a function of their distance is a probe of Quantum Chromodynamics (QCD). As a signature of confinement the potential in the Yang-Mills theory rises asymptotically proportional to the distance. The slope is called the string tension. In presence of dynamical quarks the potential flattens at large distances due to the formation of a pair of mesons made of a static and a dynamical quarks. We present results for the three lowest potential levels obtained from simulations of lattice QCD which include the dynamics of the up and down (light) and the strange quarks. At distances around 1.2 fm and 1.4 fm two string breakings are observed due to the formation of a pair of static-light and static-strange mesons respectively. We compute the string tension in QCD defined through a model of the energy levels which takes into account string breaking.



This is a hybrid colloquium: ZOOM Meeting ID: 996 1652 8733, Password: 733220

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