VẬT LÝ LÝ THUYẾT và VẬT LÝ TÍNH TOÁN
Theoretical and Computational Physics
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Lectures on High Energy Physics
(Bài giảng về lý thuyết trường)

Tiêu đề/Title:
Current Algebra and Unitarity

Người trình bày/Speaker:
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Thời gian/Time:

10g00-11g00, các ngày: thứ Hai và thứ Năm
Từ 18/11/2013 đến 5/12/2013.

Địa điểm/Venue:
Phòng 211, Viện Vật lý, 10 Đào Tấn, Ba Đình, Hà Nội

Tóm tắt/abstract

In this series of 5 lectures, I review the development of some low energy properties of the Quantum Chromo Dynamics as viewed from the Current Algebra Low Energy Pion Theorems in combination with Dispersion Relation and Unitarity. In the first two lectures, mathematical preliminary tools, such as the LSZ reduction formulae, the solution of the Muskelishvilli Omnes Integral equation, the soft photon and soft pion theorems are discussed. The unitarity relation and the non relativistic effective range expansion and K-matrix expansion of the strong intraction in the low energy region are given. The low energy pion pion elastic scattering, using the low energy QCD and the unitarised version of the Chiral Perturbation Theory (the Inverse Amplitude Method or the Pade Approximant method) is shown to be in good agreement with the experimental data.The third lecture is devoted to the calculation of the vector pion form factor, using dispersion relation, the low energy property of the QCD and the elastic unitarity relation. It is shown that the elastic unitarity relation is a reasonably good approximation, but not completely adequate. It is shown here that perturbation theory is not adequate to study the strong interaction problem.The fourth and fifth lectures are devoted to the Current Algebra calculations of K ->pi l nu, Tau ->K pi nu, K(D,B)->pi pi l nu, K->pi, 2pi, 3pi, K->2gamma and the eta->3pi problem. In all these lectures, it is strongly emphasized that the unitarity relation is important to study the low energy QCD properties.

Kính mời tất cả mọi người quan tâm đến dự!
All those interested are welcome to attend!