



吉首大学学报自然科学版 » 2009, Vol. 30 » Issue (1): 51-55 DOI:

物理与电子

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超越基本粒子标准模型的某些问题

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Some Problems Beyond the Standard Model of the Elementary Particle

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全文: PDF (2026 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 青景资料

摘要 长期受实验支持的标准模型,它的某些基本原理最近已受到实验事实的责难.如:EMC组发现的EMC效应;CLEO组发现的味变中性流夸克转换过程;CDF组发现夸克有结构的迹象及HERA的HI和ZEUS机发现的 $[\text{AKI}] - q$ 共振预示可能存在更深层次的物理;超神冈实验指出中微子有质量、混合和振荡;多家实验发现光子的夸克/胶子结构,轻子有“反常磁矩”等.这些实验事实都背离了标准模型的基本原理,对其重新审视是必要的.

关键词: 标准模型 夸克、轻子结构 中微子质量、混合和振荡 “反常荷”和“反常磁矩”

Abstract: Some prime principles of the standard model of the elementary particle which have been supported over a long period of time have incurred censure recently from experimental facts,for example,EMC effect found by EMC group,the conversion process of flavor-changing neutral currents of a quark discovered by CLEO team,indications that a quark has structure by CDF group and $[\text{AKI}] - q$ resonance by machines HI and ZEUS of HERA which may mean deeper and further physics there,a neutrino having mass,mixedness and oscillation pointed out by Kamioka Collaboration experiment,quark-gluon structure of a photon discovered,a lepton having anomalous magnetic moment,and so on.All those deviate from the standard model,so it is necessary to reexamine the standard model of particle.

Key words: standard model structure of quark and lepton mass; mixedness and oscillation abnormal charge and abnormal magnetic moment

基金资助:

国家自然科学基金资助项目(40474033)

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引用本文:

许第余,焦善庆,龚自正等.超越基本粒子标准模型的某些问题[J].吉首大学学报自然科学版,2009,30(1):51-55.

XU Di-Yu,JIAO Shan-Qing,GONG Zi-Zheng et al. Some Problems Beyond the Standard Model of the Elementary Particle[J]. Journal of Jishou University (Natural Sciences Edit, 2009, 30(1): 51-55.

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