International Center for Quantum Materials, PKU

Weekly Seminar

Using optical atomic clock to study SU(*N*)-symmetric interactions in Sr orbital magnetism

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Time: 4:00pm, Sept. 10, 2014 (Wednesday)
: 2014 9 10 4:00
Venue: Room 607, Science Building 5
607

Abstract

Inter-atomic interactions have been a key source of systematic uncertainty for the world's best atomic clocks in the past six years. Thanks to the development of ultrastable lasers with 1 10^{-16} instability, these interactions are now characterized to very high precision, which not only allows our single clock ("JILA SrII") to achieve the best performance in two key ingredients necessary for a primary standard – stability and accuracy, both at the 10^{-18} level [1], but also enables our first-generation system ("JILA SrI") to realize a powerful laboratory to study a many-body spin system with strongly interacting, open, and driven dynamics [2]. Here we report a spectroscopic observation of SU(*N* 10) symmetry in ^{87}Sr with I=9/2 [3] on the basis of the