



Weekly Seminar

Spinor Bose-Einstein condensates of rotating polar molecules

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Time: 4:00pm, Sept. 23, 2015 (Wednesday)

时间: 2015年9月23日 (周三) 下午4:00

Venue: Room W563, Physics Building, Peking University

地点: 北京大学物理学院, 西楼563会议室

Abstract

We propose a scheme to realize a pseudospin-1/2 model of the $^1\Omega(v=0)$ bialkali polar molecules with the spin states corresponding to two sublevels of the first excited rotational level. We show that the effective dipole-dipole interaction between two spin-1/2 molecules couples the rotational and orbital angular momenta and is highly tunable via a microwave field. We also investigate the ground state properties of a spin-1/2 molecular condensate. A variety of nontrivial quantum phases, including the doubly-quantized vortex states, are discovered. Our scheme can also be used to create spin-1 model of polar molecules. Thus, we show that the ultracold gases of bialkali polar molecules provide a unique platform for studying the spinor condensates of rotating molecules.

About the Speaker

Dr. Su Yi got his bachelor degree from University of Science and Technology of China in 1993. After that, he continued his study for PhD in Georgia Institute of Technology, and got his degree in 2002. From 2002 to 2006, he did a postdoc in Georgia Institute of Technology and Rice University. In 2005, he was selected by the "Hundred talents program" of Chinese Academy of Sciences. In 2010, he obtained the National Outstanding Youth Fund.