



Special Seminar

Majorana edge modes in topological superconductors

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Leiden University



Time: 4:00pm, April 19, 2016 (Tuesday)

时间: 2016年4月19日 (周二) 下午4:00

Venue: w563, Physics building, Peking University

地点: 北京大学物理楼, 西563会议室

Abstract

Two-dimensional superconductors with broken time-reversal symmetry have been predicted to support topologically protected chiral edge states, providing a thermal analogue of the electrical quantum Hall effect in semiconductors. Several decades of search for these edge states (notably in strontium ruthenate) have not yet produced convincing evidence for their existence. The key difficulty is that the edge states are charge neutral, and therefore would seem to be out reach of conventional electrical probes. Here we discuss some recent developments in our understanding of the Majorana nature of the superconducting edge states, which suggests that shot noise measurements would provide for a purely electrical method of detection.

About the Speaker

Carlo W. J. Beenakker is a professor at Leiden University and leader of the university's mesoscopic physics group. He is an important physicist in condensed matter physics, and received numerous awards (e.g. Spinoza Prize, Akzo Nobel Science Award). He has published over 340 papers, and is one of the most cited physicists, with an H-index 73 (web of science). He is a member of the Royal Holland Society of Sciences and Humanities, and a member of the Royal Netherlands Academy of Arts and Sciences. In 2015 he was knighted in the Order of the Dutch Lion.