

中央研究院數學研究所

Institute of Mathematics, Academia Sinica

Taipei Postdoc Seminar

Speaker : 謝天長 博士 Dr. Tien-Tsan Shieh
(National Center for Theoretical Sciences)

Title : *Ground State Patterns and Phase Transition of Spin-1 Bose-Einstein Condensates via Γ -Convergence Theory*

Abstract :

In this talk, I will introduce an analytic theory for the ground state patterns of spin-1 Bose-Einstein condensates (BECs) and their corresponding phase transition in an infinite trap potential on a bounded domain in the presence a uniform magnetic field. Configurations of the ground state in a system with different quadratic Zeeman energy and total magnetization is found within its Thomas-Fermi approximation. The sharp interface limit of the Spin-1 BEC model is derived through the Gamma convergence technique. A complete phase diagram for both ferromagnetic and antiferromagnetic systems is obtained in the semi-classical regime. It is shown that the interface between two different phases of a ground state has constant mean curvature, and its contact angle between the interface and the boundary obeys the Young's relation.

Time : 11:00 – 12:30, Wednesday, April 19, 2017

Venue : Room 202, Astro-Math. Buidling (NTU Campus)

Organizer : Yu-Yen Chien (NCTS), Jyun-Ao Lin (Academia Sinica)

Refreshment : 10:30

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