

日本物理学会大阪支部講演会のお知らせ

Information of the JPS Osaka Branch Lecture

日時: 平成22年4月27日(火) 16:00~
Date and time: 27th Apr. (Tue.) 16:00~

場所: 兵庫県立大学・理学部・研究棟7階談話室(739号室)
Place: Lecture room 739, 7F, Faculty of Science, University of Hyogo

講演者: 五十嵐亮 氏 (原子力機構・システム計算科学センター)
Speaker: Dr. Ryo Igarashi (JAEA)

講演題目: 非対称スピンラダーとスピントューブの基底状態と励起状態
Title: Ground state and some excited states of asymmetric spin ladder and spin tube

要旨:

Abstract:

Spin ladder and Spin tube system have attracted much attention since these systems are the intermediates between 1D and 2D quantum systems. We calculated the low energy spectrum of the asymmetric $S=1/2$ spin tube and spin chain system using our directly-extended two-dimensional density-matrix renormalization-group (dex-DMRG) method. We focus on 3-leg spin tube system up to $L=256$ where the inter-chain coupling(J_2) is weaker than the inner-tube one(J_1). We computed the lowest 10 eigenvalue on the $S=0$ and $S=1$ sector and determined the degeneracy structure. Moreover, we calculated the fully periodic lattice with extension to our dex-DMRG code. We found that the excited state structure changes around $J_2/J_1=0.5$, which may indicate the possible gap-less region. We will also discuss the comparison between the 5-leg spin tube and the 5-leg spin ladder system.

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