國立清華大學數學系訪問學者學術演講
NTHU Department of Mathematics
Visiting Scholar Colloquium

講題　　　Decomposing tensor product by Dirac cohomology

講者　　　Prof. Jing-Song Huang

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地點　　　綜合三館4F Lecture Room B

Abstract

Let g be a complex semisimple Lie algebra. Let F be a finite-dimensional g-module with weights $\mu_1,...,\mu_k$, and X be an arbitrary g-module with infinitesimal character χ_λ. Kostant proved that an infinitesimal character which occurs in the tensor product of $X \otimes F$ is necessarily of the form $\chi_{\lambda+\mu_i}$ $(i = 1, ..., k)$. However, it is a difficult question whether a nonzero submodule with infinitesimal character $\chi_{\lambda+\mu_i}$ indeed occurs in $X \otimes F$. Assume X is a Harish-Chandra module with infinitesimal character χ_λ. We prove a criterion when a nonzero submodule with infinitesimal character $\chi_{\lambda+\mu_i}$ occurs in $X \otimes F$ by using Dirac cohomology.