



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SPECIAL COLLOQUIUM IN MATHEMATICS

Quaternionic Analysis, Representation Theory and Physics

by

Prof. Igor Frenkel

Yale University

Abstract

Representation theory of infinite-dimensional algebras motivates the present development of quaternionic analysis. We recall the Fueter quaternionic analogue of the Cauchy integral formula and consider its generalizations. Our study extensively uses representation theory of the conformal group of quaternions. In particular, intertwining operators for tensor products of certain representations of the conformal group allow us to define quaternionic algebras of functions. Quaternionic dilogarithm, box Feynman diagram, and other relations to four-dimensional conformal field theory in physics appear naturally in our development of quaternionic analysis.

Date : 22 March 2023 (Wednesday)

Time : 4:30pm

Venue : Room 4621 (Lifts 31/32)

All are Welcome!