

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research
Department of Mathematics*

MINI COURSE

Projective homogeneous varieties

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Abstract

The objects of the minicourse are the algebraic varieties over a field that are projective and homogeneous under the action of an algebraic group. Over the complex numbers, every such variety is the product of an abelian variety with a rational projective homogeneous variety, of the form G/P for a semisimple group G and a parabolic subgroup P . The minicourse will first discuss this result due to Borel and Remmert, and the structure of parabolic subgroups of semisimple groups. It will then present generalizations of these classical results over an algebraically closed field due to Wenzel, Sancho de Salas and Maccan. The case of an arbitrary field will be discussed finally, based on results of Borel-Tits and joint work in progress with Matilde Maccan and Srimathy Srinivasan.

Lecture 1:	May 4, 2026 (Monday)	10:00 am – 12:00 pm
Lecture 2:	May 5, 2026 (Tuesday)	10:00 am – 12:00 pm
Lecture 3:	May 6, 2026 (Wednesday)	11:00 am – 12:00 pm

Room 210, Run Run Shaw Bldg., HKU

All are welcome