

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

Colloquium

How boundaries shape geometry in Einstein spaces

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Abstract

Einstein metrics extend the constant-curvature geometries – spherical, flat, and hyperbolic – into a much broader world. This talk asks how much of the interior geometry is determined or constrained by what happens on the boundary. I will explain two versions of this problem in four dimensions: one where the boundary is an actual boundary of the space, and one where the boundary sits “at infinity.” In both cases, boundary data can strongly restrict the interior Einstein geometry, sometimes preventing degeneration. In the boundary-at-infinity setting, the same viewpoint also leads to a concrete method for constructing new Einstein metrics with prescribed boundary behaviour, producing new families of examples beyond small deformations of known ones.

Date:	January 28, 2026 (Wednesday)
Time:	11:00 am - 12:30 pm
Venue:	Room 210, Run Run Shaw Bldg., HKU

All are welcome