MINI-SCHOOL

NITheCS
National Institute for Theoretical and Computational Sciences

Graded rings in projective geometry

Prof Balázs Szendrői (University of Vienna, Austria)

Attend two lectures:
Wed, 12 Feb 2025 @ 14h00-16h00 SAST
Wed, 19 Feb 2025 @ 15h00-17h00 SAST

Venues:
Online and
Room 1006, Mathematics/Industrial Psychology Building, Stellenbosch University

ABSTRACT

The purpose of these lectures is to introduce methods to study projective varieties in (weighted) projective space via looking at the algebraic structure of the associated graded coordinate algebra, following the philosophy advocated in particular by Miles Reid and his school. Numerical invariants of the algebra (its Hilbert function, Hilbert numerator, etc) are related to the underlying space via Riemann-Roch type theorems. Algebraic structures of the algebra (whether it is Cohen-Macaulay, Gorenstein, etc) are reflected in geometric properties of the embedding. The lectures will be very much examples-based, exploring curves, K3 surfaces, Fano varieties, etc. We will build up the theory as we go along.

BIOGRAPHY

Balázs Szendrői is a Professor in Algebraic Geometry at the University of Vienna, Austria. He obtained his BA and PhD degrees at Trinity College, University of Cambridge, and subsequently worked at the Universities of Warwick and Utrecht, and for many years at the University of Oxford and St Peter's College. He is a specialist in higher-dimensional, combinatorial and enumerative algebraic geometry.

His interests also include art, both ancient and modern. He has worked for 15 years on research development throughout Africa, with projects in Kenya, Uganda, Rwanda, Nigeria and elsewhere. He is a Trustee of the London-based charity Supporting African Mathematics Initiatives, the current Chair of the Committee for Developing Countries of the European Mathematical Society, and a former Council member of AIMS South Africa.

REGISTER: https://bit.ly/3Ws3m1E

science, technology & innovation
Department: Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

NRF National Research Foundation

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT