



UNIVERSITÀ
DI TRENTO

Dipartimento di
Matematica

DOTTORATO



CYCLE 34th
ORAL DEFENCE OF THE PHD THESIS

Monday 14 February 2022 – at 2:00 pm
Seminar room “-1”

The event will take place online through the ZOOM platform.
To get the access codes please contact the secretary office

Reynaldo Staffolani

PhD Student in Mathematics

Schur apolarity and how to use it

Abstract:

Structured tensors are multilinear objects that satisfy specific symmetry relations. The aim of the thesis is to investigate the tensor decomposition of such objects in terms of elementary tensors which are naturally parametrized by points of $SL(n)$ -rational homogeneous varieties. This set of varieties includes also Veronese varieties (symmetric tensors), Grassmann varieties (skew-symmetric tensors), and flag varieties. Symmetric tensors have been classically studied using the apolarity theory. An analogous skew-symmetric apolarity theory for skew-symmetric tensors has been developed only few years ago. In this talk we introduce the Schur apolarity theory, which is a general apolarity theory suitable for structured tensors related to $SL(n)$ -irreducible representations. The key result called Schur apolarity lemma, that links a decomposition of a tensor to an inclusion of ideals, is also presented.

Supervisor: Alessandra Bernardi (University of Trento)

CONTATTI

Staff di Dipartimento - Matematica
tel. 0461 281508-1625-1701-3786

phd.maths@unitn.it
www.maths.unitn.it