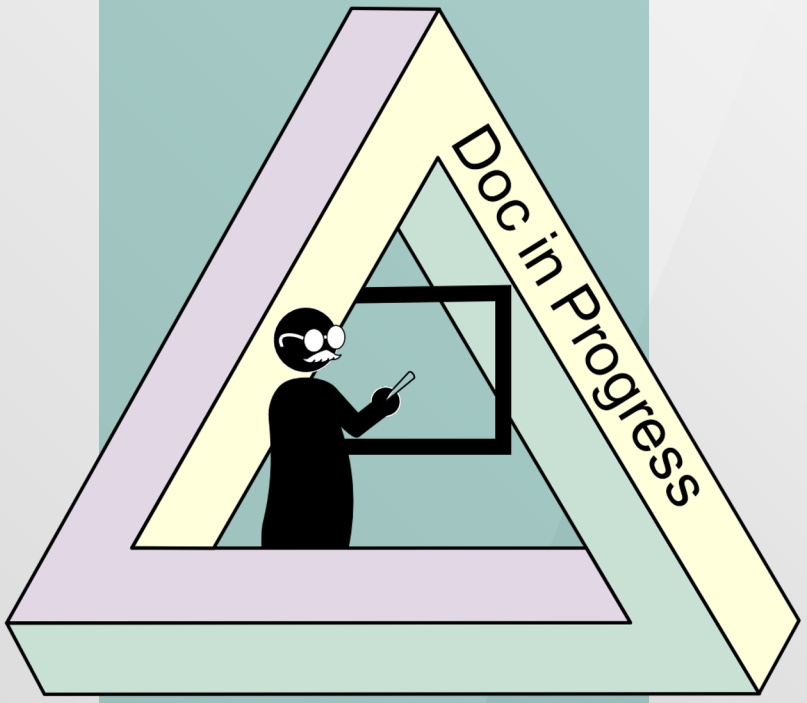
UNIVERSITÀ DI TRENTO
Dipartimento di Matematica



PhD in Mathematics

"Doc in Progress" is pleased to introduce you to

Elia Vincenzi

University of Rome II Tor Vergata

PhD in Mathematics

From classical to quantum probability: a C^*-algebraic approach

In 1930, the statistician Bruno De Finetti proved that a sequence (X_j) of Bernoulli random variables satisfying the *exchangeability* property (that is, invariance of its joint distribution under all possible permutations of finitely many variables) is, loosely speaking, a mixture of many sequences, each of them made of independent and identically distributed variables. An analyst would say that De Finetti's one is a representation theorem: all exchangeable probability measures form a convex set, where each of them is expressible as a suitable *barycenter* of the extremal points, the product measures. After briefly explaining the deep connection between (classical) *measures* and (quantum) *states* of a C^*-algebra, I will show recent extensions of the theorem to the exchangeable states defined on various tensor products of C^*-algebras, until my ongoing case study of the *rotation algebra* A_ϑ, a widely investigated object in non-commutative geometry modelling the deformation of the well-known "donut" $\mathbb{S}^1 \times \mathbb{S}^1$.

Thursday, January 19 – at 16:00 CET

The seminar will take place in room "Aula Seminari -1" (Department of Mathematics). If needed, please contact docinprogress.unitn@gmail.com using an institutional e-mail address to ask for a Zoom streaming of the event.