Johannes Nicaise: **Refined curve counting and Hrushovski-Kazhdan motivic integration**

Motivated by mathematical physics, Block and Göttsche have defined "quantized" versions of Mikhalkin's multiplicities for tropical curves. In joint work with Sam Payne and Franziska Schroeter, we propose a geometric interpretation of these invariants as χ_y genera of semi-algebraic analytic domains over the field of Puiseux series. In order to define and compute these χ_y genera, we use the theory of motivic integration developed by Hrushovski and Kazhdan and we explore its connections with tropical geometry.