CHAIRE DE LA VALLÉE POUSSIN | **2025** |

Professor
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Invited lecture 1 : Large random tilings of a hexagon with periodic weightings

Wednesday 19 November 2025 10:30 (1 hour)

Large random tilings of a hexagon have the fascinating behavior of distinct asymptotic phases (frozen and rough; also called solid and liquid) separated by a well-defined Arctic curve. In a weighted tiling model with periodically varying weights a third phase (smooth; or gaseous) appears where correlations between tiles decay at an exponential rate.

I will discuss an approach towards a rigorous analysis of a three periodic hexagon tiling model, that includes matrix valued orthogonal polynomials, Riemann-Hilbert problems, and steepest descent analysis on a Harnack curve.

Presenter: KUIJLAARS, Arno (KU Leuven)