**Postdoctoral Researcher in Random Geometry and Quantum Gravity**

What is the physics of spacetime at the tiniest of scales? How can we formulate consistent laws of gravity in a quantum regime? In search of answers our mathematical and numerical tool box is stretched to its limits. As a postdoctoral researcher, you will aim to expand the tool box and to explore opportunities to address these fundamental questions. Join a stimulating research environment at the interface of physics, mathematics and computational science.

We are looking for a postdoctoral researcher with affinity for mathematical or numerical random geometry and/or quantum gravity to contribute to the search for consistent microscopic models of spacetime geometry. As a postdoctoral researcher you will join the Quantum Geometry group of T. Budd, funded by the NWO Vidi programme "Quantum Geometry: spacetime at the tiniest of scales".

The programme has its footing in the solid mathematical basis of random geometry (including the theory of random planar maps, Liouville quantum gravity, topological recursion, hyperbolic geometry and Weil-Petersson volumes, moduli spaces, and matrix and tensor models) as well as in numerical lattice quantum gravity (causal dynamical triangulations, random simplicial geometry, Monte Carlo methods). Its general aims are to extend these analytic and numerical methods beyond their current range of applicability; to utilize them to find new universality classes of random geometries; and to explore the relevance of these classes as candidate microscopic models of spacetime geometry in non-perturbative quantum gravity. The programme is deliberately placed at the interface of high-energy physics, mathematics and computational science to make the most of the developments in the respective fields. In particular, the research group benefits from a diverse composition of expertise and we therefore invite applications from all relevant research fields.

Your responsibility as a postdoctoral researcher will be to contribute to the theme of the programme while building upon your expertise in one or more of the relevant research fields. You will be expected to interact with colleagues from neighbouring fields and to look for opportunities to build new bridges between those fields.
**Profile**

- You hold a PhD degree in physics or mathematics.
- You are expected to have a demonstrable interest and experience in at least one of the following topics: quantum gravity; random geometry; combinatorics and/or probability theory of random planar maps or other models or random surfaces; Monte Carlo methods in statistical physics or lattice quantum gravity.
- You are excited about working in a multidisciplinary research environment and have affinity with communicating with researchers across fields (e.g. mathematics, physics, computational science).

**We are**

The Quantum Geometry group is part of the Gravity section of the High Energy Physics department at Radboud University. The Gravity section currently consists of six staff scientists (J. Ambjorn (part-time), B. Bonga, T. Budd, B. Krishnan, R. Loll, F. Saueressig) and about twice as many PhD candidates and postdoctoral researchers, with research topics ranging from black holes and gravitational waves to lattice quantum gravity, the functional renormalisation group and random geometry. We have close ties to gravitational research in both the Astrophysics (including a large involvement in the Event Horizon Telescope) and Mathematics departments (including mathematical relativity, noncommutative geometry and stochastics), with which we share the Institute for Mathematics, Astrophysics and Particle Physics (IMAPP). Our diversity and broad expertise in gravity combined with many regular activities provides a stimulating environment for both early-career and experienced researchers.