



Vienna School  
of Mathematics

# PhD Colloquium

Valerie Roitner:

## Pattern Avoidance in Lattice Paths

In this talk we are going to study lattice paths (i.e. finite polygonal lines in  $\mathbb{Z}^2$ ) constrained to avoid a given pattern (i.e. a fixed word/subpath).

Lattice paths appear in many different mathematical models in biology, physics and computer science, but are of purely mathematical interest as well since they stand in bijection with many other combinatorial objects.

We will discuss the (combinatorial) kernel method as well as its vectorial generalization which is a very helpful tool for solving lattice path enumeration problems. Furthermore, we will also see some extensions thereof, e.g. a lattice path avoiding several patterns or methods for counting how many times a certain pattern appears.

14. May

14:00 - 14:45

Online at

[vsmath.at/academics/phd-colloquia](https://vsmath.at/academics/phd-colloquia)