



VIENNA
DOCTORAL
SCHOOL
MATHEMATICS

PhD Colloquium

Paola Lopez:

An Adelic Approach to Number Theory

Ultrametric spaces are metric spaces that satisfy a stronger version of the triangle inequality. The topology on an ultrametric space has counter-intuitive and surprising properties, e.g. the diameter of a ball being less than or equal to its radius.

Considering the rational numbers with certain ultrametrics induced by prime numbers p leads to the construction of p -adic numbers as completions with respect to those metrics. The interplay of algebraic and topological aspects allows us to combine all p -adic completions into one useful object, namely the adelic ring.

In this talk, I will give an introduction to ultrametric spaces and p -adic numbers and we will see that two fundamental theorems in classical number theory translate into elementary topological statements in the adelic ring.

18. April,
13:30-14:15
HS 16, OMP-1