



Vienna School
of Mathematics

PhD Colloquium

Willi Kepplinger

Why does the Klein Bottle look so weird?

When you first heard about the Klein Bottle you might have been confounded by the fact that there is no good depiction of it. Why can't people just draw a proper picture of the thing? One that does not self intersect? It turns out that it is impossible to "draw the Klein Bottle" in \mathbb{R}^3 without self intersections, and this is a math fun fact that people often throw around but that is rarely proven (even in lectures on topology). In this Colloquium I want to close this gap by providing an elementary self-contained proof that the Klein bottle (and many more objects) cannot be "drawn in 3-d space" without self intersections.

10 June, 15:00 – 15:45

**SR05, Faculty of Mathematics,
University of Vienna**
(Oskar-Morgenstern-Platz 1, 1st Floor)