

# BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

**Thursday, 5 March, 12:15-13:00**  
Seminarraum 05.002, Spiegelgasse 5

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## Effective Approximation and Diophantine Applications

### ABSTRACT

How well can an irrational number be approximated by rationals? This is the driving question of diophantine approximation. If the irrational number is algebraic (e.g. the cube root of 2), the problem is especially interesting because of its connection to diophantine equations (e.g.  $x^3 - 2y^3 = 1$ ). In my talk, I give an introduction to diophantine approximation and its chronic problems with effectivity (the important difference between knowing that a constant exists and knowing what it is). I present in more detail a sketch of Siegel's proof of his (ineffective) theorem on diophantine approximation and explain how I modified this proof in my master's thesis and what (effective) new applications resulted from it.