# Proof mining in ergodic theory

Philipp Gerhardy

Department of Mathematics
University of Oslo, Oslo, Norway
philipp.gerhardy@gmail.com

We will survey some recent applications of proof theory, more precisely proof mining, to ergodic theory. The focus will be on general techniques for extracting computational information from seemingly non-constructive proofs. First, we will present and discuss some computability and some non-computability results related to the Mean Ergodic Theorem and the Pointwise Ergodic Theorem. Then we will sketch a recent analysis (by Avigad and Towsner) of the Furstenberg structure theorem, which is central to applications of ergodic theory to combinatorics.