

- ▶ ANDREAS WEIERMANN, *Recent trends in phase transitions for Gödel incompleteness.*

Department for Mathematics, Krijgslaan 281 S22, 9000 Ghent.

*E-mail:* [Andreas.Weiermann@UGent.be](mailto:Andreas.Weiermann@UGent.be).

First we survey phase transitions related to classical independence results for first order Peano arithmetic. In particular we treat refinements of results by H. Friedman and by J. Paris and L. Harrington. These refinements will depend on an interaction between classical proof theory and analytic combinatorics.

In the second part we will cover recent developments on phase transitions which emerge from Kristiansen style subrecursive degree theory. The idea is to refine the study of degrees of PA provably recursive functions and to induce a degree structure on threshold functions.

If time is left we will discuss some amazing phase transition results related to the Ackermann function.