Determinacy in some point classes associated with Second Order Arithmetic

P.D. Welch

University of Bristol, England
p.welch@bristol.ac.uk

Session: 32. Set Theory

It is well known that infinite perfect information two person games at low levels in the arithmetic hierarchy of sets have winning strategies for one of the players, and moreover this fact can be proven in analysis alone. This has led people to consider reverse mathematical analyses of precisely which subsystems of second order arithmetic are needed. It is possible to lift such arguments to establish the amount of determinacy, properly including analytic determinacy, provable in the corresponding theory fragments of $ZF^- +$ "there is a measurable cardinal" (the latter theory corresponding roughly to 'analysis' beyond analytic).

Recently Montalban and Shore [1] gave a precise delineation of the amount of determinacy provable in analysis. This too lifts to our context. We summarise some recent joint work with Chris Le Sueur in this direction.

References

[1] A. Montalbán and R. Shore *The limits of determinacy in second order number theory,* Proceedings of the London Mathematical Society (3), vol. 104, No. 2, 223-252.