Combinatorial Principles in Inner Models

Martin Zeman

We shall present the Friedman-Jensen approach to the theory of fine structural inner models $\mathbf{L}[E]$ for overlapping extender sequences and analyse several combinatorial principles in these models. Among these principles are $\diamondsuit_\kappa(A)$, $\diamondsuit^+_\kappa$, $square_\kappa$, global *square*, weak *square* principles like Jensen's $square^*_\kappa$, Schimmerling's $square_{\kappa,\lambda}$ and $square_{\kappa,<\kappa}$, existence of κ^+-Aronszajn and Souslin trees. Unlike in $\mathbf{L}$, most of these principles need not hold in $\mathbf{L}[E]$, but we give a complete characterisation of them, that is, a condition equivalent to the failure of these principles in $\mathbf{L}[E]$. This condition is in $\mathbf{L}[E]$ equivalent to Jensen's weak extendibility principle and its consistency strenth ranges at the level of superstrong cardinals.

Address: Institut für Formale Logik, Univarsität Wien, Wahringer Str. 25, 1090 Wien, Austria
E-mail: zeman@mathematik.hu-berlin.de