

SQUARES, ASCENT PATHS, AND CHAIN CONDITIONS

PHILIPP LÜCKE

ABSTRACT. Given an uncountable regular cardinal κ , Todorćević's square principle $\square(\kappa)$ asserts the existence of a non-threadable coherent club sequence of length κ . In my talk, I want to present several new constructions of combinatorial objects from this principle. In particular, I will show that for all $\kappa > \omega_1$, the principle $\square(\kappa)$ implies the existence of a non-specializable κ -Aronszajn tree as well as a failure of the countable productivity of the κ -Knaster property. All of these constructions rely on a result that shows that $\square(\kappa)$ implies an *indexed version* of the principle $\square(\kappa, \lambda)$.

This is joint work with Chris Lambie-Hanson (Bar-Ilan).

MATHEMATISCHES INSTITUT, RHEINISCHE FRIEDRICH-WILHELMS-UNIVERSITÄT BONN, ENDENICHER
ALLEE 60, 53115 BONN, GERMANY
E-mail address: `pluecke@uni-bonn.de`