1135-03-1194 **Chris Lambie-Hanson*** (lambiec@macs.biu.ac.il) and **Philipp Lücke**. *Squares, ascent paths, and chain conditions.*

Using a variety of square principles, we obtain results on the consistency strengths of the non-existence of κ-Aronszajn trees with narrow ascent paths and of the infinite productivity of strong κ-chain conditions. In particular, we show that, if κ is an uncountable regular cardinal that is not weakly compact in L, then:

1. for every $\lambda < \kappa$, there is a κ-Aronszajn tree with a λ-ascent path;
2. there is a κ-Knaster poset $\mathbb{P}$ such that $\mathbb{P}^\omega$ does not have the κ-chain condition;
3. there is a κ-Knaster poset that is not κ-stationarily layered.

This answers questions of Cox and Lücke. (Received September 20, 2017)