PERSISTENCE OF AR(1)-SEQUENCES

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For a class of one-dimensional autoregressive processes \( \{X_n\} \) we consider the tail behaviour of the stopping time \( T := \min \{n > 0 : X_n \leq 0 \} \). The main purpose of the talk is to discuss various analytical approaches to this problem and to find minimal moment conditions on the innovations, under which one has a purely geometric decay of \( P(T_0 > n) \).

The talk is based on a joint paper with Günter Hinrichs and Martin Kolb.