ASYMPTOTIC ANALYSIS OF q-RECURSIVE SEQUENCES

GABRIEL F. LIPNIK

Many well-known combinatorial sequences satisfy some sort of recurrence relations. In this talk, we discuss a special class of such sequences, so-called q-recursive sequences. For an integer $q \geq 2$, a q-recursive sequence is defined by recurrence relations on subsequences of indices modulo some fixed power of q. Precise asymptotic results for these sequences are obtained via a detour to q-regular sequences in the sense of Allouche and Shallit.

It turns out that many combinatorial sequences are in fact q-recursive. We conclude the talk by studying some specific q-recursive sequences in detail.

This is joint work with Clemens Heuberger and Daniel Krenn.

Graz University of Technology, Austria
Email address: math@gabriellipnik.at