1049-14-146   **H. Schenck*** (`schenck@math.uiuc.edu`), Math Dept, UIUC, 1409 W. Green St, Urbana, IL 61801, and **M Stillman** (`mike@math.cornell.edu`). *Toric specializations of the Rees algebra of Koszul cycles.*

We describe obstructions to a conjecture that the length of the 2-linear strand of a homogeneous, prime, nondegenerate ideal I with degree two piece generated by quadrics of rank at most four is governed by a determinantal subideal of I, and prove a variant of the conjecture. The obstructions arise from toric specializations of the Rees algebra of Koszul cycles, and we give an explicit construction of toric varieties with minimal linear syzygies of arbitrarily high rank. (Received March 02, 2009)