1108-05-206   **Thomas Lam**, **Pavlo Pylyavskyy*** (`ppylyavs@umn.edu`) and **Reiho Sakamoto**. *Rigged Configurations and Cylindric Loop Schur Functions.*

Rigged configurations are known to provide action-angle variables for remarkable discrete dynamical systems known as box-ball systems. We conjecture an explicit piecewise-linear formula to obtain the shapes of a rigged configuration from a tensor product of one-row crystals. We introduce cylindric loop Schur functions and show that they are invariants of the geometric R-matrix. Our piecewise-linear formula is obtained as the tropicalization of ratios of cylindric loop Schur functions. We prove our conjecture for the first shape of a rigged configuration, thus giving a piecewise-linear formula for the lengths of the solitons of a box-ball system. (Received January 13, 2015)