1150-17-250 **Peter Tingley***, Dept of math and stats, 1032 W. Sheridan Rd., Chicago, IL 60660. *An approach to root multiplicities for symmetric Kac-Moody algebras through quiver varieties.*

We present combinatorial upper bounds on dimensions of certain imaginary root spaces for symmetric Kac-Moody algebras. These come from the realization of the corresponding infinity-crystal using quiver varieties. The framework is general, but we only work out specifics for one case. We believe our bounds are quite tight, and give both computational evidence and heuristic justification for this belief, but unfortunately no proof. (Received July 10, 2019)