

1119-90-114

Kaie Kubjas and **Elina Robeva*** (erobeva@gmail.com), 150 Panoramic Way, Berkeley, CA 94704, and **Richard Z Robinson**. *Positive Semidefinite Rank and Nested Spectrahedra*.

The set of matrices of given positive semidefinite rank is semialgebraic. In this work we study its geometry and in small cases we describe its boundary. For general psd rank we give a conjecture for its boundary and for its semialgebraic description. Our proof techniques are based on studying nested spectrahedra and spectrahedral shadows. (Received February 11, 2016)