1117-14-303   **Grigoriy Blekherman**, **Daniel Plaumann**, **Rainer Sinn*** (`sinn@math.gatech.edu`) and **Cynthia Vinzant**. *Low rank psd lifts of nonnegative quadratic forms.* Preliminary report.

We fix a projection on the space of real symmetric matrices given by its kernel L. Given a quadratic form q that is nonnegative on the variety defined by the quadrics in L, we find the lowest rank of a positive quadratic form in the fibre of q under additional assumptions on the variety $\mathcal{V}(L)$. We will count the number of such low rank extensions in case the variety is a rational normal scroll of dimension 2. (Received January 16, 2016)