1146-17-125 **Kang Lu*** (lukang@iupui.edu), 402 N.Blackford St. LD 270, Indianapolis, IN 46202, and **Evgeny Mukhin** (emukhin@iupui.edu) and **Alexander Varchenko** (anv@email.unc.edu).

Self-dual Grassmannian, Wronski map, and representations of $\mathfrak{gl}_N$, $\mathfrak{sp}_{2r}$, $\mathfrak{so}_{2r+1}$.

We define a $\mathfrak{gl}_N$-stratification of the Grassmannian of N planes $\mathrm{Gr}(N,d)$. The $\mathfrak{gl}_N$-stratification consists of strata Ω_Λ labeled by unordered sets $\Lambda=(\lambda^{(1)},\dots,\lambda^{(n)})$ of nonzero partitions with at most N parts, satisfying a condition depending on d, and such that $(\otimes_{i=1}^n V_{\lambda^{(i)}})^{\mathfrak{sl}_N}\neq 0$. Here $V_{\lambda^{(i)}}$ is the irreducible $\mathfrak{gl}_N$-module with highest weight $\lambda^{(i)}$. We show that the closure of a stratum Ω_Λ is the union of the strata Ω_Ξ, $\Xi=(\xi^{(1)},\dots,\xi^{(m)})$, such that there is a partition $\{I_1,\dots,I_m\}$ of $\{1,2,\dots,n\}$ with $\mathrm{Hom}_{\mathfrak{gl}_N}\bigl(V_{\xi^{(i)}},\otimes_{j\in I_i}V_{\lambda^{(j)}}\bigr)\neq 0$ for $i=1,\dots,m$. The $\mathfrak{gl}_N$-stratification of the Grassmannian agrees with the Wronski map.

We introduce and study the new object: the self-dual Grassmannian $\mathrm{sGr}(N,d)\subset\mathrm{Gr}(N,d)$. Our main result is a similar $\mathfrak{g}_N$-stratification of the self-dual Grassmannian governed by representation theory of $\mathfrak{g}_{2r+1}:=\mathfrak{sp}_{2r}$ if $N=2r+1$ and of $\mathfrak{g}_{2r}:=\mathfrak{so}_{2r+1}$ if $N=2r$. (Received January 14, 2019)