The space $\mathbb{C}^m$ is the standard representation of the Lie algebra $\mathfrak{gl}_m$. The $N$-th tensor power $V = (\mathbb{C}^m)^\otimes N$ has the weight decomposition $V = \bigoplus \lambda V_{\lambda}$ where the sum is over sequences of nonnegative integers $\lambda = (\lambda_1, ..., \lambda_m)$ with $\lambda_1 + ... + \lambda_m = N$. I will discuss a baby version of "the mirror symmetry" between a weight subspace $V_{\lambda}$ and the cohomology of the partial flag variety $F\lambda$ parametrizing subspaces $0 = L_0 \subset L_1 \subset L_2 \subset ... \subset L_m = \mathbb{C}^N$ with $\dim L_j/L_{j-1} = \lambda_j$. In particular, I will construct the conformal block of level one in $V_{\lambda}$ in terms of the equivariant cohomology of $F\lambda$. An application of this construction gives new Selberg-type integrals.

This is a joint work with R. Rimányi and V. Schechtman.