Gale duality, blowups and moduli spaces

Carolina Araujo

IMPA

Gale correspondence provides a duality between sets of n points in projective spaces $\mathbb{P}^s$ and $\mathbb{P}^r$ when $n = r + s + 2$. For small values of s, this duality has a remarkable geometric manifestation: the blowup of $\mathbb{P}^r$ at n points can be realized as a moduli space of vector bundles on the blowup of $\mathbb{P}^s$ at the Gale dual points. We explore this realization to describe the birational geometry of blowups of projective spaces at points in very general position.