

THE AMPLE CONE OF A $K3$ SURFACE

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ABSTRACT

For a projective surface X , the cone of positive square elements in the Néron-Severi group $\mathrm{NS}(X)_{\mathbb{R}}$ has two connected components \mathcal{C}^+ and $-\mathcal{C}^+$. The ample cone $\mathrm{Amp}(X)$ is the collection of all finite linear combinations of ample line bundles with nonnegative real coefficients in $\mathrm{NS}(X)_{\mathbb{R}}$, and it sits inside of \mathcal{C}^+ . I will explain in this talk what the ample cone looks like when X is a $K3$ surface. In this case, there is a nice description of $\mathrm{Amp}(X)$ in terms of a discrete group called the Weyl group W . This group is generated by the reflections associated with the classes of (-2) -curves in the $K3$ surface. Moreover, when X is a $K3$ surface, the Weyl group acts on the positive cone with fundamental domain equal to the closure of $\mathrm{Amp}(X)$.