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Moduli Spaces of Stable Pairs in Donaldson-Thomas Theory

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Let $(X,\mathcal{O}_X(1))$ be a polarized smooth projective variety over the complex numbers. Fix $\mathcal{D}\in \mathrm{coh}(X)$ and a nonnegative rational polynomial δ. Using GIT we contruct a coarse moduli space for δ-semistable pairs $(\mathcal{E},\phi)$ consisting of a coherent sheaf $\mathcal{E}$ and a homomorphism $\phi\colon \mathcal{D}\rightarrow \mathcal{E}$. We prove a chamber structure result and establish a connection to the moduli space of coherent systems constructed by Le Potier in \cite{LeP} and \cite {LeP2}.

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