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Moduli Spaces of Stable Pairs in Donaldson-Thomas Theory

Malte Wandel

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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 construct a coarse moduli space for δ -semistable pairs (\mathcal{E}, ϕ) consisting of a coherent sheaf \mathcal{E} and a homomorphism $\phi: \mathcal{D} \rightarrow \mathcal{E}$. We prove a chamber structure result and establish a connection to the moduli space of coherent systems constructed by Le Potier in [\[LeP\]](#) and [\[LeP2\]](#).

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MSC classes: 14D20, 14D22, 14N35

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