1057-16-383   **Susan J. Sierra*** (`ssierra@princeton.edu`), Princeton University Mathematics Department, Fine Hall, Washington Road, Princeton, NJ 08544, and **Tom Nevins** (`nevins@illinois.edu`), University of Illinois Mathematics Department, Urbana, IL 61801. *Moduli spaces for point modules of naive blowups.*

Let $B(X, \mathcal{L}, \sigma)$ be the twisted homogeneous coordinate ring of an irreducible projective variety X of dimension ≥ 2, and let $z \in X$. Keeler, Rogalski, and Stafford construct a subalgebra $R(X, \mathcal{L}, \sigma, z) \subset B(X, \mathcal{L}, \sigma)$ by following the commutative method for blowing up X at z. The algebras $R = R(X, \mathcal{L}, \sigma, z)$ are known as *naive noncommutative blowup algebras*. Keeler, Rogalski, and Stafford show that if z and σ are in general enough position, then the images of point modules in $\mathrm{qgr} - R$ are naturally in bijective correspondence with closed points of X. However, in both $\mathrm{gr} - R$ and $\mathrm{qgr} - R$, point modules are not parameterized by any projective scheme.

We show that for a naive noncommutative blowup algebra $R(X, \mathcal{L}, \sigma, z)$ as above, the variety X is a coarse moduli space for isomorphism classes of point modules in $\mathrm{qgr} - R$. This gives a geometric structure to the bijection above, and has applications to the classification of noncommutative surfaces. (Received January 26, 2010)

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