

Title: Smooth Hilbert schemes

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Abstract: In algebraic geometry, Hilbert schemes are the prototypical parameter spaces: their points correspond to closed subschemes in a projective space with a fixed Hilbert polynomial. After surveying some of their known features, we will present new numerical conditions on the polynomial that completely characterize when the associated Hilbert scheme is smooth. In this smooth situation, our explicit description of the subschemes being parametrized also provides new insights into the global geometry of Hilbert schemes. This talk is based on joint work with Roy Skjelnes (KTH).