

Compatibly split subvarieties of the Hilbert scheme of points in the plane

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By a result of Kumar and Thomsen, the standard Frobenius splitting of the affine plane induces a Frobenius splitting of the Hilbert scheme of n points in the plane. It's then natural to ask, "what are all of the compatibly Frobenius split subvarieties?" I'll motivate this question and describe the answer for some small values of n . Following this, I'll restrict to a specific affine patch (now for arbitrary n) where I'll describe all compatibly split subvarieties as well as a helpful degeneration to Stanley-Reisner schemes. Time permitting, I'll discuss a connection to Poisson geometry.