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Geometric vertex decomposition and liaison

Geometric vertex decomposition and liaison are two frameworks that are useful for studying classes of ideals in polynomial rings. These approaches were historically used by two distinct communities of mathematicians.

In this talk, I will connect these two approaches. In particular, I will show that each geometrically vertex decomposable ideal is linked by a sequence of ascending elementary G-biliaisons of height 1 to an ideal of indeterminates and, conversely, that each elementary G-biliaison of a certain type gives rise to a geometric vertex decomposition. As a consequence, I will show that several well-known families of ideals are glicci.

This is joint work with Patricia Klein.