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Poisson Cluster Algebras and Unique Factorization.

Two phenomena frequently encountered in cluster algebras are the existence of a compatible Poisson structure and unique factorization of the Poisson-normal elements of the algebra. It is expected that semiclassical limits of quantum algebras share these properties, an expectation that has been confirmed in many cases.

We will discuss the reverse direction – how combinations of Poisson structures and unique factorization lead to cluster algebra structures. The results apply to algebras from a large class of Poisson UFDs. [Joint work with Milen Yakimov] (Received September 10, 2020)