

Cluster algebra via non-archimedean geometry.

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I will explain the enumeration of non-archimedean curves in cluster varieties. We can construct a scattering diagram via the enumeration of infinitesimal non-archimedean cylinders and prove its consistency. Then we prove a comparison theorem with the combinatorial constructions of Gross-Hacking-Keel-Kontsevich. This has several very nice implications, such as the broken-line convexity conjecture, a geometric proof of the positivity in the Laurent phenomenon, and the independence of the mirror algebra on the choice of cluster structure, as conjectured by GHKK. This is joint work with Keel, arXiv:1908.09861.