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Geometric invariants encoded in the Newton polygon

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Let C be the plane curve defined by a bivariate Laurent polynomial f that is sufficiently generic (in some precise sense) with respect to its Newton polygon $\Delta(f)$. It was proven by Khovanskii in 1977 that the geometric genus of C equals the number of points in the interior of $\Delta(f)$ that have integral coordinates. In this talk I will give a list of other invariants that allow for a similar combinatorial interpretation, the most notable of which are the gonality and the Clifford index. This will include joint work with Filip Cools, Jeroen Demeyer and Alexander Lemmens.

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