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Parametrizations with exponents in cones and the algebraic closure of the field of rational functions in several variables.

When working with an algebraically closed field of characteristic zero. Newton-Puiseux theorem asserts that, at a singular point, a plane curve may be parametrized by a Puiseux series. In arbitrary dimension, singularities of hypersurfaces cannot, in general, be parametrized, anyhow, we can assure the existence of parametrizations in "wedges". These parametrizations are represented as Laurent Puiseux series whose support is contained in the translation of a rational strongly convex cone.

With the above result, we may construct different algebraically closed fields containing the field of power series in several variables. Which of these elements are algebraic over the field of power series? We will give some characterizations in terms of the support set.

Joint work with G. Ilardy, V. Saavedra and G. Rond.