On the Abhyankar–Moh inequality

Arkadiusz Płoski

Kielce University of Technology, Poland
matap@tu.kielce.pl

Session: 2. Algebraic Geometry

Let C be a complex affine algebraic curve of degree $n > 1$ having only one branch at infinity γ and let $r_0, r_1, \ldots, r_h$ be the n-sequence of the semigroup G of the branch γ defined as follows: $r_0 = n, r_k = \min\{r \in G : r \notin \mathbb{N}r_o + \cdots + \mathbb{N}r_{k-1}\}$ for $k \geq 1$ and $G = \mathbb{N}r_o + \cdots + \mathbb{N}r_h$. Then the Abhyankar–Moh inequality (see [1, 2]) can be stated in the form

$$\gcd\{r_0, \ldots, r_{h-1}\}r_h < n^2. \qquad (AM_n)$$

The aim of this talk is to present (see [3]) some results on the semigrups $G \subset N$ of plane branches γ with property (AM_n). In particular we describe such semigroups with the maximum conductor.

References

[1] S.S.Abhyankar, T.T.Moh, *Embeddings of the line in the plane.* J. reine angew. Math.276 (1975), 148-166.

[2] E.García Barroso, A.Płoski, *An approach to plane algebroid branches* preprint arXiv:1208.0913 [math.AG].

[3] R.D.Barrolleta, E.R. Garca Barroso and A.Płoski, *Appendix to [2].*