

On bifurcation of cusps

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Let $f = \mathbf{R} \times \mathbf{R}^2, 0 \rightarrow \mathbf{R}^2, 0$ be an analytic mapping having a critical point at the origin. There is the corresponding one-parameter family of mappings $f_t = f(t, \cdot) : \mathbf{R}^2 \rightarrow \mathbf{R}^2$.

There will be presented effective algebraic methods of computing the number of cusps of f_t , where $0 < |t| \ll 1$, emanating from the origin and having a positive/negative cusp degree.