Generalised principal part of some planar vector fields

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Abstract: In this paper the problem of the principal part of planar vector fields is considered. In previous papers, Berezovskaya [B] and Brunella and Miari [BM] define an algebraic codimension one set V_1 in the space V of all polynomial planar vector fields. They define the principal part X_Δ of a vector field $X \in V \setminus V_1$ and prove that a vector field $X \in V \setminus V_1$ is topologically equivalent to its principal part X_Δ.
We consider the space W of vector fields in V having only one useful side in the Newton diagram and the space $W_1 = W \cap V_1$ of vector fields in W, $W_1 \subset V_1$. We extend their results to some vector fields in W_1. We define a codimension two set $W_2 \subset W_1$ and the generalised principal part $X_{\bar{\Delta}}$ of a vector field $X \in W \setminus W_2$. We prove that $X \in W \setminus W_2$ is topologically equivalent to its generalised principal part $X_{\bar{\Delta}}$.