On Integrability of a Planar ODE System.

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We consider an autonomous system of ordinary differential equations, which is solved with respect to derivatives. To study local integrability of the system near a degenerate stationary point, we use an approach based on Power Geometry method and on the computation of the resonant normal form. For a planar 5-parametric example of such system, we found the complete set of necessary and sufficient conditions on parameters of the system for which the system is locally integrable near a degenerate stationary point.