On Standard Bases over Newton's Polytopes: Generalization of Buchberger's algorithm

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Sometimes solutions of PDEs, ODEs or algebraic equations can be represented in implicit form as an equations set in (formal) power series. The ring of formal power series is the Noetherian ring, so the ideal in this ring has a finite basis. It is useful to have a technique for rewriting a system of equations in formal multivariate power series to the form which would allow to use the standard technique for branches solving low dimensional series (Newton, Weierstrass). Situation here looks like the "triangle representation" for algebraic systems. We tried to modify the Buchberger algorithm for the discussed problem. Because title "standard bases in the ring of formal power series" has been occupied by Thomas Becker for another purpose we use the name "standard bases in Newton's polytopes".