论文

AN ELIMINATION METHOD FOR DIFFERENTIAL POLYNOMIAL SYSTEMS I

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摘要　　This is the first in a series of papers describing an elimination method for differential (abbr. d-) polynomial systems. We present two mds algorithms, one with and the other without projection, for decomposing any system of multivariate ordinary d-polynomials over an ordinary d-field of characteristic 0 into d-triangular systems. The second algorithm that computes d-triangular systems possessing certain projection property also yields a quantifier elimination procedure for algebraically closed d-fields. An example is given to illustrate our algorithms with their preliminary implementation in Maple. In the forthcoming papers of this series, we shall present algorithms for irreducible zero decomposition of ordinary d-polynomial systems and zero decomposition of partial d-polynomial systems over d-fields of arbitrary characteristic.

关键词　　Differential polynomial system, triangul

分类号

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Key words   Differential polynomial system   triangular system   zero decomposition   proJection

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