COMPUTATION OF JANET BASES. I.MONOMIAL BASES

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In this talk we present algorithms and their implementation in C for construction of monomial Janet bases. As data structures for finite monomial sets certain trees called Janet trees are selected. We describe an algorithm for construction of a minimal Janet basis for the ideal generated by a finite number of monomials which is the specific form of that in paper [1, 2] for Janet division. As subalgorithms the algorithm contains those for fast search of Janet divisors in the given Janet tree, and for insertion of irreducible nonmultiplicative prolongation into this tree. The presented algorithms implemented in C. We give some examples illustrating practical efficiency of the algorithms and implementation. The algorithms play also an important role in computation of polynomial Janet bases.

References

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