COMPUTATION OF JANET BASES. II.POLYNOMIAL BASES

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Involutive bases of polynomial ideals [1] and linear differential ideals [2] are Gröbner bases of special form. Though involutive bases are generally redundant as Gröbner ones, their use makes more accessible the structural information of polynomial and differential ideals. Janet bases may be cited as typical representatives of involutive bases and have been used in algebraic and Lie symmetry analysis of differential equations. In this talk we present the first versions of programs in C, C++ and Reduce implementing the involutive algorithms for construction of Janet bases of polynomial ideals. We compare the timings for these programs with those for computer algebra system *Singular* running on the same computer platform. As benchmarks we consider those collected in [3] and have been widely used for Gröbner bases software.

References

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