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Emma Knutsson: Gröbner bases and applications

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Sammanfattning

Bruno Buchberger initiated the theory of Gröbner bases and Buchberger's algorithm 1965, since then it has been the key to solve many problems in physics, chemistry and last but not least computational algebra. This essay is a first introduction to Gröbner Bases. We will go through the theoretical background of Gröbner Bases and Buchberger's algorithm and we will look at some applications where we use Gröbner bases to solve systems of polynomial equations and implicitization problems.