

Software for numerical irreducible decomposition

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This talk is on the design and organization of software for solving polynomial systems numerically. In the last century, this numerical solving was confined to approximating all isolated solutions. Recent homotopy methods decompose positive dimensional solution sets into irreducible components. This numerical irreducible decomposition is one of fundamental tools in numerical algebraic geometry. The satisfactory performance of the algorithms on a wide class of practical applications justifies our efforts to make the software publicly available both as toolbox and blackbox.