

NUMERICALLY COMPUTING GALOIS GROUPS

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The Galois/monodromy group of a family of equations (or of a geometric problem) is a subtle invariant that encodes the structure of the solutions. In this talk, we will use numerical algebraic geometry to compute Galois groups. Our algorithm computes a witness set for the critical points of our family of equations. With this witness set, we use homotopy continuation to construct a generating set for the Galois group. Examples from optimization will be stated (maximum likelihood estimation and formation shape control).

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