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**Ioannis Koutis\***, ioannis.koutis@upr.edu. *Algebraization in parameterized algorithms and complexity.*

We survey recent advances in parameterized algorithms based on algebraization techniques: reductions to fundamental parameterized problems on multivariate polynomials. We also discuss how limitations of algebraic methods, implied by parameterized complexity, can reveal beautiful mathematical facts. (Received September 24, 2012)