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**Nathan Bliss, Timothy Duff\*** (tduff3@gatech.edu), **Cvetelina Hill, Kisun Lee, Anton Leykin, Anders Jensen** and **Jeff Sommars**. *Monodromy solver: sequential and parallel*.

Monodromy provides a powerful but largely heuristic set of tools for studying algebraic equations via numerical homotopy continuation. We consider the application of monodromy to “generic solving” for families of zero-dimensional polynomial systems. We establish a language describing the implementation of such solvers in terms of decorated graphs and showcase some successes of a basic implementation in the Macaulay2 system. We also consider potential avenues for improvement—while naive statistical analysis provides insight into the successes, the fine-tuning of better solvers may require experimentation outside the scope of theory. In pursuit of this goal, we have also developed a simulator that allows us to run a large number of experiments without recomputing the outcomes of the continuation subroutine. (Received September 04, 2018)