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Polynomial Homotopy Continuation in the Cloud.

Polynomial homotopy continuation methods apply symbolic-numeric algorithms to solve polynomial systems. We describe the design and implementation of our web interface to PHCpack and reflect on the application of polynomial homotopy continuation methods to solve polynomial systems in the cloud. We prove that the graph isomorphism problem is equivalent to checking if the support of two polynomial systems are isomorphic, and we describe how this is necessary for the web interface. (Received August 10, 2015)