

Computational approaches for solving general systems of nonlinear equations in the cloud

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Abstract

Finding one or more solutions to a system of nonlinear equations (SNE) is a computationally hard problem with many applications in sciences and engineering. First, we will briefly discuss classical approaches for addressing (SNE). Then, we will discuss the various ways that a SNE can be transformed into an optimization problem, and we will introduce techniques that can be utilized to search for solutions to the global optimization problem that arises when the most common reformulation is performed. We will present computational results in the cloud using different state of the art heuristics.