

Applications of geometric optimisation techniques to engineering problems

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ABSTRACT. Very recently, the fledgling field of geometric optimisation produced its first globally recognised successes in the form of competitive numerical algorithms for the solution of some problems in Numerical Linear Algebra (extreme eigenspaces of matrix pencils) and in Signal Processing (parallel independent component analysis). In this presentation, I will introduce some engineering problems to which these techniques can be applied and will explain how the algorithms work and why they are superior to classical methods. I will attempt a very brief summary of the current state of the art in geometric optimisation and will mention where the open problems are.