

Symmetry in Trigonometric Optimization

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A trigonometric polynomial is a linear combination of exponential functions on a lattice. We consider weight lattices of root systems with Weyl group symmetry. This work presents two approaches to minimize an invariant trigonometric polynomial, based on semi-definite relaxation techniques. The first approach exploits symmetry by a reduction to the orbit space, the second by computing a symmetry adapted basis. We compare the computational complexity and numerical precision.