

## Symmetry reduction in AM/GM-based optimization

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The arithmetic mean/geometric mean-inequality (AM/GM-inequality) facilitates classes of non-negativity certificates and of relaxation techniques for polynomials and, more generally, for exponential sums. In this talk, we present a study of the AM/GM-based techniques in the presence of symmetries under the linear action of a finite group. After stating a symmetry-adapted representation theorem, we will describe techniques to reduce the size of the resulting relative entropy programs. Then, we will focus on the complexity gain in the particular case of the symmetric group. In this setup, we will present certain stabilization results, and exhibit several sequences of examples in growing dimensions where the size of the problem stabilizes. Finally, we will provide some numerical results, emphasizing the computational speed-up.