Symmetric SAGE and SONC forms and exactness of relaxations

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The cones of sums of arithmetic-geometric exponentials (SAGE cone) and sums of nonnegative circuit polynomials (SONC) provide non-negativity certificates and relaxations for signomials and polynomials, enriching the computational techniques based on sums of squares. In this talk we discuss techniques to exploit and to analyze these cone in the presence of symmetries under the linear action of a finite group. Based on a symmetry-adapted representation, we present a class of signomials (respectively polynomials) where the SAGE-relaxation (respectively SONC-relaxation) is exact.

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