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## Maximization for Inner Products Under Quasi-Monotone Constraints

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**Abstract:** This paper studies optimization for inner products of real vectors assuming monotonicity properties for the entries in one of the vectors. Resulting inequalities have been useful recently in bounding reciprocals of power series with rapidly decaying coefficients and in proving that all symmetric Toeplitz matrices generated by monotone convex sequences have off-diagonal decay preserved through triangular decompositions. An example of an application of the theory to global optimization for inner products is also provided.

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