

Improved approach for obtaining dual cones and extended construction of convex cones

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Abstract

In our previous work [1] we proposed two novel mechanisms for generating closed convex cones: one based on systems of inequalities and the other on support functions, together with explicit characterizations of the associated dual and polar cones. Building upon these results, the present talk develops a strengthened and more systematic approach for deriving dual and polar cones from given convex cones. In addition, we establish a significantly extended and unified framework for the construction of convex cones, which broadens the scope of applicability of existing methods and provides greater structural flexibility.

References

- [1] C-Y YANG, Y-L CHANG, C-C HU, AND J-S CHEN, *Novel constructions for closed convex cones through inequalities and support functions*, Journal of Optimization Theory and Applications, vol. 205, no. 3, Article 57, 2025.