

**SEARCHING FOR CRITICAL ANGLES
IN A CONVEX CONE**

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The concept of antipodality relative to a closed convex cone $K \subset \mathbb{R}^d$ has been explored in detail in a recent work of ours. The antipodality problem consists of finding a pair of unit vectors in K achieving the maximal angle of the cone. Our attention now is focused not just in the maximal angle, but in the angular spectrum of the cone. By definition, the angular spectrum of a cone is the set of angles satisfying the stationarity (or criticality) condition associated to the maximization problem involved in the determination of the maximal angle. In the case of a polyhedral cone, the angular spectrum turns out to be discrete. Among other results, we obtain an upper bound for the cardinality of this set. We also discuss the link between the critical angles of a cone K and the critical angles of its dual cone.