APERTURE ANGLE ANALYSIS FOR ELLIPSOIDS*

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Abstract. Let $\Omega \subseteq \mathbb{R}^n$ be a compact convex set and $x$ be a point in the exterior of $\Omega$. The aperture angle of $x$ relative to $\Omega$ is defined as the maximal angle of the smallest closed convex cone that contains $\bar{\Omega} - x$. This note provides an explicit formula, based on eigenvalues of symmetric matrices, for the aperture angle of a point relative to an ellipsoid.

Key words. Supporting cone, Ellipsoidal cone, Aperture angle, Incenter of a cone.

AMS subject classifications. 15A18, 15A63, 52A20, 90C26.