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**Javier Alonso\*** (jalonso@unex.es), Departamento de Matematicas, Universidad de Extremadura, 06071 Badajoz, Spain, and **Pedro Martin**. *Characterizations of Ellipsoids by Sections*.

Let  $S$  be the boundary of a convex body in the  $d$ -dimensional Euclidean space  $E^d$  ( $d \geq 3$ ). It is well known that  $S$  is an ellipsoid if and only if the section of  $S$  given by any hyperplane is ellipsoidal. The question of whether it is actually necessary to consider “any” hyperplane to characterize  $S$  as ellipsoid or is enough to consider “some” hyperplanes is at the origin of an important family of characterizations of ellipsoids. In that context, we study whether we can restrict the hyperplanes to those that are parallel to two or three fixed hyperplanes and also whether we can consider only hyperplanes that contain one of two fixed linear varieties. (Received February 06, 2007)