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**Alina Stancu\*** ([alina\\_stancu@uml.edu](mailto:alina_stancu@uml.edu)), Department of Mathematical Sciences, Olney Hall 428, University of Massachusetts Lowell, Lowell, MA 01854. *A characterization of ellipsoids via illumination bodies*. Preliminary report.

Let  $K \subset \mathbb{R}^n$  be a convex body and let  $\delta > 0$  be a real number. We call the  $\delta$ -illumination body associated to  $K$  the convex body

$$K^\delta = \{x \in \mathbb{R}^n : Vol_n(co[x, K] \setminus K) \leq \delta\}.$$

The subject of this talk is the conjecture stating that  $K$  is homothetic to  $K^\delta$  if and only if  $K$  is an ellipsoid. (Received September 24, 2005)