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**Gabor A Toth\*** ([gtoth@camden.rutgers.edu](mailto:gtoth@camden.rutgers.edu)), 411 North 5th Street, Camden, NJ 08102. *A measure of symmetry for convex sets and its application to moduli for minimal immersions of spheres.* Preliminary report.

Asymmetry of a compact convex body  $\mathcal{L} \subset \mathbf{R}^n$  viewed from an interior point  $\mathcal{O}$  can be measured by considering how far  $\mathcal{L}$  is from its inscribed simplices that contain  $\mathcal{O}$ . This leads to a sequence of measures of symmetry  $\{\sigma_k(\mathcal{L}, \mathcal{O})\}_{k \geq 1}$  in the sense of Grünbaum. This sequence of measures has interesting arithmetic properties. The interior of  $\mathcal{L}$  naturally splits into regular and singular sets, where the singular set consist of points with largest possible  $\sigma_n(\mathcal{L}, \mathcal{O})$ . In general, to calculate the regular and singular sets is difficult. In this talk we give a variety of methods that facilitate this calculation. The methods are illustrated by several examples. The original motivation for introducing these measures is to describe the geometry of the DoCarmo-Wallach moduli spaces of minimal immersions of spheres. We use the DeTurck-Ziller minimal orbit method for  $SU(2)$  to calculate these measures on the  $SU(2)$ -equivariant moduli of  $S^3$  into spheres. (Received August 11, 2010)