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Vladyslav Yaskin* (yaskinv@math.missouri.edu), Department of Mathematics, University of Missouri, Columbia, MO 65211, and **Maryna Yaskina** (yaskinam@math.missouri.edu), Department of Mathematics, University of Missouri, Columbia, MO 65211. *Centroid bodies and comparison of volumes.*

For $-1 < p < 1$ we introduce the concept of a polar p -centroid body Γ_p^*K of a star body K . We consider the question of whether $\Gamma_p^*K \subset \Gamma_p^*L$ implies $\text{vol}(L) \leq \text{vol}(K)$. Our results extend the studies by Lutwak in the case $p = 1$ and Grinberg, Zhang in the case $p > 1$. (Received September 13, 2005)