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Igor N Szczyrba* (igor.szczyrba@unco.edu), University of Northern Colorado, School of Mathematical Sciences, Greeley, CO 80639. *On dilations, centers of mass, and golden ratio*. Preliminary report.

We investigate properties of regions in the n -dimensional Euclidean spaces E^n that are obtained by ‘subtracting’ from a connected set in E^n its images under λ -dilations about a homothetic center S . We derive, in particular, the relations between the center of mass G of the set, the center of mass G' of the region, and the homothetic center S . If $n=2$, we show that the distances $d(G,G')$ and $d(G,S)$ are equal if λ coincides with the golden ratio. (Received February 11, 2014)