1054-51-190　　　　　　**Steffen Winter***, Institut für Algebra und Geometrie, Universität Karlsruhe, Kaiserstr. 89, 76133 Karlsruhe, Germany, and **Jan Rataj**, Charles University, Prague, Czech Rep. *On volume and surface area of parallel sets.*

We show that if A is a bounded subset of $\mathbb{R}^d$ and $r > 0$ then the set of all points with distance r from A is $(d-1)$-rectifiable. This observation allows to improve some known results on volume and boundary surface area of the r-parallel sets. We also study the asymptotic behaviour of both measures as $r \to 0$ and show that there is a close relation between the Minkowski content and the corresponding rescaled limit of the boundary surface area. This also suggest a characterization of Minkowski measurability in higher dimensions extending results of Lapidus and Pomerance on the real line. Some applications to random sets, in particular the Wiener sausage, and to self-similar fractal sets are discussed. (Received September 14, 2009)