Jana Marikova* (j-marikova@wiu.edu) and Masahiro Shiota. *Geometric measures on definable sets in o-minimal structures.*

Let $R$ be an o-minimal expansion of a real closed field, and let $V$ be the convex hull of $\mathbb{Q}$ in $R$. We define a measure on the $R$-definable subsets of $V^n$. This measure takes values in an ordered semiring, and has various desirable properties. For example, the measure of an interval is its length, and it satisfies a change of variables formula. If the value group of the standard valuation on $R$ is of rank one, then this measure can be extended to a measure on all the bounded definable sets, while maintaining the above properties. (Received September 15, 2014)