Wesley S. Cross* (crossw@stockton.edu), Richard Stockton College of New Jersey, NAMS B-108, Pomona, NJ. Volumes of p-adic Analogues of Rational Polyhedra.

The lattice points of a rational polyhedron $P \subseteq \mathbb{R}^n$ correspond to a semi-algebraic subset of the $p$-adic space $Q_p^n$. The principal value volume of the semi-algebraic set is given explicitly in terms of the rational generating function associated to $P$ when $P$ is a rational cone. (Received August 09, 2007)