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Bruce Olberding* (olberdin@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88011. *Intersections of rank one valuation rings*. Preliminary report.

The class of rings that can be represented as an intersection of rank one valuation rings is large and diverse. It includes all integrally closed Noetherian domains (more generally, Krull domains) as well as important Prüfer domains such as the ring of entire functions, the ring of integer-valued polynomials and the holomorphy ring of a formally real function field over a real closed field. While it is well understood when the intersection of rank one valuation rings is a Krull domain, the situation in which such an intersection is a Prüfer domain is more subtle. In this talk we consider topological and geometric features of intersections of rank one valuation rings, with special emphasis on the case in which the intersection is a Prüfer domain. Some applications to the theory of quadratic transforms of a regular local ring are given. (Received January 30, 2016)