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Matthew Toeniskoetter*, mtoenisk@purdue.edu, and **William Heinzer** and **Bruce Olberding**. *Valuations and Invariants Associated With Directed Unions of Local Quadratic Transforms.*

We examine ideal-theoretic properties of the directed union S of an infinite sequence of local quadratic transforms of a regular local ring. We associate a boundary valuation ring V to the sequence and examine its relation to S and to the complete integral closure of S . We define an associated invariant τ and describe how τ determines the structure of V and S , namely the rank of V , whether S is archimedean, and whether S is completely integrally closed. (Received August 09, 2015)