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Bruce M Olberding* (olberdin@nmsu.edu), Department of Mathematical Sciences, Las Cruces, NM 88003-8001. *Holomorphy rings of function fields.*

Let K be a non-algebraically closed field of characteristic 0, and let F be a field extension of K such that F is a finitely generated K -algebra. We define the absolute K -holomorphy ring H of F to be the intersection of all valuation rings V containing K with quotient field F such that K is existentially closed in the residue field of V . The ring H is a Prüfer domain. If $F|K$ has transcendence degree 1, then H is a Dedekind domain, but if the transcendence degree is > 1 , then H has a complicated ideal theory. We describe in the case of transcendence degree > 1 some aspects of the ideal theory of H . (Received August 16, 2005)