

1048-13-145

David E. Dobbs* (dobbs@math.utk.edu), Department of Mathematics, 1534 Cumberland Avenue, University of Tennessee, Knoxville, TN 37996-0612, and **Jay Shapiro**, Department of Mathematics, George Mason University, Fairfax, VA 22030-4444. *Patching together a minimal overring*. Preliminary report.

Let R be a (commutative integral) domain and M a maximal ideal of R . Let $T(M)$ be a minimal ring extension of R_M . Our basic question is (*): does there exist a (necessarily minimal) ring extension T of R such that $T_M \cong T(M)$ and $T_N = R_N$ canonically for each prime ideal $N \neq M$ of R ? The answer to (*) is affirmative if $T(M)$ is not a domain. Several equivalences are given for an affirmative answer to (*) when $T(M)$ is a domain, such as the existence of $a \in T(M) \setminus R_M$ such that M is the radical of $(R :_R a)$. If R is a Prüfer domain that has property (#), the answer to (*) is affirmative for all such data $\{M, T(M)\}$; the converse is false in general but holds for Prüfer domains each of whose maximal ideals is branched. (Received February 04, 2009)