1069-13-125 **Marco Fontana**, **Evan Houston** and **Thomas Lucas*** (tglucas@uncc.edu). *Pseudo-Dedekind Factorization.* Preliminary report.

A nonzero ideal I of an integral domain R is said to have a pseudo-Dedekind factorization if there is an invertible ideal J (which may be R) and finitely many pairwise comaximal prime ideals $P_1, P_2, \ldots, P_n$ with $n \geq 1$ such that $I = JP_1P_2 \cdots P_n$. The domain R has pseudo-Dedekind factorization if each nonzero noninvertible ideal has a pseudo-Dedekind factorization. This is a slightly weaker notion than that of a ZPUI domain (which is equivalent to each nonzero ideal has a pseudo-Dedekind factorization). In particular, each ZPUI domain is a Prüfer domain, but there are domains with pseudo-Dedekind factorization that are not integrally closed. Also, each maximal ideal of a ZPUI domain is invertible, but a rank one valuation domain whose corresponding value group is the real numbers has pseudo-Dedekind factorization. In addition, there is a valuation domain with pseudo-Dedekind factorization whose maximal ideal is unbranched. (Received January 19, 2011)