Meeting: 1004, Bowling Green, Kentucky, SS 11A, Special Session on Commutative Ring Theory

1004-13-173 **Sarah Glaz*** (`glaz@uconnvm.uconn.edu`), Department of Mathematics, University of Connecticut, Storrs, CT 06269. *Prufer, Gaussian, and Arithmetical Rings.* Preliminary report.

Let R be a commutative ring, and let f be a polynomial with coefficients in R. The content of f, $c(f)$, denotes the ideal of R generated by the coefficients of f. A ring R is called a Gaussian ring if $c(fg) = c(f)c(g)$ for all polynomials f and g with coefficients in R. Gaussian rings were defined by Tsang (1965). Gilmer (1967) had shown that for an integral domain R the Gaussian property and the Prufer domain property are equivalent. This talk revolves around some recent results obtained by the speaker jointly with Silvana Bazzoni, regarding the extension of Gilmer's result to rings with zero-divisors. In particular, we consider two very closely related extensions of the notion of a Prufer domain to rings with zero-divisors, arithmetical rings and Prufer rings. The class of arithmetical rings is contained in the class of Gaussian rings, which is in turn contained in the class of Prufer rings. We explore the extent to which these three classes of rings are different, and some conditions under which they coincide. (Received January 24, 2005)