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**Alan Koch\*** (akoch@agnesscott.edu), Department of Mathematics, Agnes Scott College, 141 E. College Ave., Decatur, GA 30030. *The Breuil Module of a Hopf Order in an Elementary Abelian  $p$ -Group Ring*. Preliminary report.

Let  $R$  be a discrete valuation ring with quotient field  $K$  and residue field characteristic  $p > 2$ . Let  $G$  be an elementary abelian group of order  $p^n$ , and let  $\mathcal{M}$  be a Breuil module of rank  $n$  which corresponds to an  $R$ -Hopf algebra  $H$ . We give necessary and sufficient conditions on  $\mathcal{M}$  to determine whether  $H$  is an  $R$ -Hopf order in  $KG$ . Examples are given when  $n = 1$  and  $n = 2$ . (Received August 28, 2006)