1116-16-164 **John S. Kauta*** (jkauta@yahoo.com), School of Computing, Info. & Math. Sciences, The University of the South Pacific, Suva, Fiji Islands. *Crossed-product orders over valuation rings and the graphs of their cocycles.*

We will discuss certain crossed-product orders over valuation rings and the graphs their cocycles produce. Let F be a field with valuation ring V, K a finite tamely ramified and defectless Galois extension of F with group G, S the integral closure of V in K, and $f : G \times G \mapsto S \setminus \{0\}$ a normalized 2-cocycle (we do not require that the values of f should be units in the ring S). Then one can form the crossed-product V-order $A_f = \sum_{\sigma \in G} Sx_\sigma$.

Associated to f is a graph $\mathrm{Gr}(f)$. When V is indecomposed in K and the order A_f is (semi)hereditary, then $\mathrm{Gr}(f)$ is a chain.

There is a second graph associated to f and a maximal ideal M of S denoted by $\mathrm{Gr}(f^M)$ which may be considered as a generalization of $\mathrm{Gr}(f)$. When the order A_f is (semi)hereditary, then this graph is again a chain whether or not V decomposes in K.

Let f_M be the restriction of f to the decomposition group G^Z of M and set $A_{f_M} = \sum_{\sigma \in G^Z} S_M x_\sigma$. There is a natural graph monomorphism from $\mathrm{Gr}(f_M)$ to $\mathrm{Gr}(f^M)$. When it is an isomorphism, then A_f is (semi)hereditary (resp. a Dubrovin valuation ring) precisely when A_{f_M} has the same property. (Received August 10, 2015)