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

There is a second graph associated to $f$ and a maximal ideal $M$ of $S$ denoted by $\text{Gr}(f^M)$ which may be considered as a generalization of $\text{Gr}(f)$. 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 $\text{Gr}(f_M)$ to $\text{Gr}(f^M)$. 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)