962-13-821   **Franz Halter-Koch*** (`franz.halterkoch@kfunigraz.ac.at`), Professsor Franz Halter-Koch, Institut für Mathematik, Heinrichstrasse 36/4, A-8010 Graz, Austria. *Conguence monoids.* Preliminary report.

Let R be a Dedekind domain, $\mathfrak{F}$ a non-zero ideal of R and $\sigma_1, \ldots, \sigma_m : R \to \mathbf{R}$ ring homomorphisms ($m \geq 0$). For $0 \neq x \in R$, we set $\sigma(x) = (\text{sign}(\sigma_1(x)), \ldots, \text{sign}(\sigma_m(x))) \in \{\pm 1\}^m$. Let Γ be a multiplicatively closed subset of the residue class ring $R/\mathfrak{F}$ and $\Delta < \{\pm 1\}^m$ a subgroup. Then the (multiplicative) monoid

$$H = \{x \in R \mid x \neq 0, x + \mathfrak{F} \in \Gamma, \sigma(x) \in \Delta\}$$

is called a congruence monoid modulo $\mathfrak{F}$ in R. The most important examples of congruence monoids are: multiplicative monoids of orders in global fields, Hilbert semigroups in $\mathbf{N}$ and principal rays in global fields. We describe the theory of v-ideals and the v-class group of congruence monoids and the invariants of non-unique factorizations. In particular, we prove that congruence monoids with finite v-class group are catenary and locally tame. (Received September 27, 2000)

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