1048-13-125        **Wolfgang A Schmid\*** (`wolfgang.schmid@uni-graz.at`), Institute of Mathematics and Sci. Computing, University of Graz, Heinrichstrasse 36, 8010 Graz, Styria, Austria. *Higher order class groups and block monoids of Krull monoids.*

The block monoid associated to a Krull monoid (e.g., a Dedekind domain), i.e., the monoid of zero-sum sequences over the subset (of the class group) of classes containing prime divisors, is a frequently used tool in investigations of the arithmetic of Krull monoids.

First, we present extensions of the notions block monoid and class group of a Krull monoid, focusing on the case that the class group is a torsion group. Then, we discuss shortcomings and potential merits of these notions, both from a conceptual and technical point of view. Finally, we point out some (new) questions in non-unique factorization theory that are motivated by these notions. (Received February 03, 2009)