998-16-264 **K R Goodearl*** (`goodearl@math.ucsb.edu`), Department of Mathematics, University of California, Santa Barbara, CA 93106, and **F Wehrung** (`wehrung@math.unicaen.fr`), CNRS, UMR 6139, Departement de Mathematiques, Universite de Caen, 14032 Caen, France. *Complete dimension theory of nonsingular injective modules.*

The dimension theory for nonsingular injective modules over a (von Neumann) regular, right self-injective ring R developed by Boyle and the first author can be phrased as associating to each nonsingular injective right R-module A a continuous function ϵ_A from a Boolean space Ω (corresponding to the boolean algebra of central idempotents in R) to the "long line" (the union of the real half-line $[0, \infty)$ with the class of infinite cardinals). This invariant determines the isomorphism classes of nonsingular injective modules, but its precise range was not determined in general, mainly due to the problem of "gaps": Among the continuous maps from Ω to the long line which satisfy the natural Type I, II, III restrictions, a map which is pointwise bounded above by one of the maps ϵ_A does not always occur as ϵ_B for any B.

We present a different dimension theory, again providing a complete isomorphism invariant, for which the range of the invariant is fully determined. As a corollary, we obtain complete descriptions (function-theoretic and axiomatic) of the monoids $V(R)$, consisting of isomorphism classes of finitely generated projective R-modules, for arbitrary regular, right self-injective rings R. (Received March 01, 2004)