1017-12-196B. H. Matzat* (matzat@iwr.uni-heidelberg.de), Im Neuenheimer Feld (INF) 368, 69120Heidelberg, Germany. Iterative Differential Equations and Finite Groups.

Iterative differential modules whose rings of constants are rings of integers in number fields (localized at finitely many primes) are called global ID-modules. It will be shown that for almost all primes p the reduction of a Picard-Vessiot ring of such global ID-module is a PV-ring of the reduced ID-module (defined over a finite field). This implies that a global PV-ring is algebraic iff for almost all p the PV-ring of the reduced ID-module is algebraic. Moreover, the global differential Galois group is a finite group G iff for almost all p the Galois group of the reduced ID-module is finite and isomorphic to G. (Received February 21, 2006)