1014-13-1123   **Harm Derksen*** (`hderksen@umich.edu`), University of Michigan, Department of Math., 530 Church Street, East hall, Ann Arbor, MI 48109-1043. *rational invariants for dynamical systems.* Preliminary report.

I will discuss algorithms for finding generators of the field of rational invariants for algebraic group actions and actions by non-algebraic groups (such as the integers). For algebraic group actions we know that rational invariants separate the orbits generically. I will describe similar results for discrete dynamical systems (actions of Z for example) and continuous dynomical systems (polynomial systems of differential equations). (Received September 27, 2005)