1030-37-29 **John W Robertson*** (robertson@math.wichita.edu), Dept. of Mathematics and Statistics, Wichita State University, Wichita, KS 67260. *Invariant Objects for Dynamical Systems.*

The simplest description of a compact manifold X is its real cohomology groups $H^k(X)$ and the simplest description of a self map $f\colon X \to X$ of a compact manifold is the induced self maps $f^*\colon H^k(X) \to H^k(X)$. An invariant measure gives an invariant representative of the top dimensional cohomology class (given that f is at least a topological self covering map). It would be nice to determine whether there are invariant representatives for other invariant cohomological classes, and also include self maps which are not topological self covering maps. The research presented shows that there is a unique(!) invariant object representing each expanding invariant cohomological class of degree one. We also give explicit bounds on local growth under which one can guarantee that there is a unique representative of higher dimensional invariant classes, including the top dimensional class. (Received June 19, 2007)