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Erhard Neher, Alistair Savage and Prasad Senesi* (senesi@cua.edu), The Catholic University of America, 620 Michigan Ave., N.E., Washington, DC 20064. *equivariant map algebras and their irreducible finite-dimensional representations.*

Let \mathfrak{g} be a finite-dimensional simple Lie algebra and A an affine algebraic variety defined over an algebraically closed field of characteristic 0. Let G be a finite group which acts via automorphisms upon \mathfrak{g} and A . The Lie algebra of regular maps from A to \mathfrak{g} which are equivariant under the action of G is called an equivariant map algebra. Examples of such algebras include current algebras, multiloop algebras (in particular, the untwisted loop algebras $\mathfrak{g} \otimes k[t^{\pm 1}]$ and their twisted subalgebras), and the Onsager algebras. In this talk we will classify the finite-dimensional irreducible representations of an arbitrary equivariant map algebra, and describe some conditions which ensure that all such representations are given by evaluation representations of \mathfrak{g} . (Received September 15, 2010)