1060-17-63 **Erhard Neher*** (neher@uottawa.ca), Department of Mathematics and Statistics, University of Ottawa, 585 King Edward, Ottawa, Ontario K1N 6N5, Canada, and **Alistair Savage** and **Prasad Senesi**. *Finite-dimensional representations of equivariant map algebras.*

We consider an affine algebraic variety X, a finite-dimensional simple Lie algebra L and a finite group G acting on both X and L by by automorphisms. The space of G-equivariant regular maps from X to L is a Lie algebra under pointwise multiplication, called an equivariant map algebra. Examples of equivariant map algebras are (twisted or untwisted) multiloop algebras, current algebras, and the Onsager (Lie) algebra.

In this talk I will present a classification of finite-dimensional irreducible representations of equivariant map algebras: They are (almost) all evaluation representations. This result recovers previously known classifications, for example for the multiloop, current and Onsager algebras. In addition, we can easily derive the precise structure of the finite-dimensional irreducible representations in previously unknown cases. This part of the talk is joint work with Alistair Savage and Prasad Senesi.

I will also discuss the structure of extensions between these representations (work in progress with Alistair Savage). (Received March 18, 2010)