1035-20-288   **Willem A. de Graaf*** (`degraaf@science.unitn.it`), Dipartimento di Matematica, Universita di Trento, Via Sommarive 14, 38050 Trento, Italy. *Making the Lie correspondence effective for algebraic groups in characteristic 0.*

A connected linear algebraic group in characteristic 0 is completely determined by its Lie algebra. In this talk we will discuss several algorithms to carry out this correspondence in practice. There are three main problems that will be considered. The first is how to compute the Lie algebra of a given linear algebraic group. Secondly we will consider the problem of constructing the smallest algebraic Lie algebra containing a given linear Lie algebra. The third problem is how to construct the connected linear algebraic group corresponding to a given algebraic Lie algebra. (Received August 30, 2007)