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Peter A Brooksbank* (pbrooksb@bucknell.edu), Department of Mathematics, 380 Olin Science Building, Lewisburg, PA 17837, and **James B Wilson**, Department of Mathematics, 231 West 18th Avenue, Columbus, OH 43210. *Constructing the group preserving a system of forms*. Preliminary report.

The finite classical groups are defined naturally as groups preserving certain types of bilinear, sesquilinear or quadratic forms. From an algorithmic viewpoint, given a matrix representing such a form, it is an easy matter to write down a set of generators for the classical group preserving that form.

This talk is concerned with the more general problem of determining the structure of the group preserving every form in a set of bilinear or sesquilinear forms. We are interested in the algorithmic aspect: given such a set of forms, can one efficiently write down a generating set for the associated group? This problem has applications to the algorithmic study of p-groups.

This reports ongoing joint work with J.B. Wilson. (Received August 25, 2008)