COMPUTING THE TABLE OF MARKS OF A FINITE GROUP

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This is an abstract of the PhD thesis *Computing the Table of Marks of a Finite Group* written by Liam Naughton under the supervision of Goetz Pfeiffer at the School of Mathematics, Statistics and Applied Mathematics, NUI, Galway and submitted in September 2010.

In this thesis we introduce a new method for constructing the table of marks of a finite group S from the table of marks of A a normal subgroup of S of index p, a prime. The first step in any such approach is to compute a list of representatives of the conjugacy classes of subgroups of S. In this spirit we describe a new algorithm which computes the conjugacy classes of subgroups of S from the conjugacy classes of subgroups of A. We then present a series of algorithms which compute the table of marks of S from the table of marks of A. Computer programs based on the theory described in this thesis have been used to compute the table of marks of S_{13} from the table of marks of A_{13}.

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