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Dustan Levenstein

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Your Name*:

Dustan Levenstein

Your supervising professor's name:

David Ben-Zvi
John Meth

Title of your work*:

Modular Representations of Symmetric Groups

Date created (at least the year)*:

May 3, 2013

Department in which the research was completed*:

UT Mathematics

Keywords/tags (at least one, separate by commas)*:

Representation Theory

Abstract or description:

I have studied representation theory of finite groups, in particular of the symmetric group over fields of prime characteristic. Over \mathbb{C} , there is a nice classification of the simple representations of symmetric groups. Here I give a description of how the standard representation behaves in prime characteristic, and I study the structure of the group algebras of small symmetric groups in more detail.

The general subject of representation theory sits at the crossroads of a vast array of subjects in mathematics, including algebraic geometry, module theory, analytic number theory, differential geometry, operator theory, algebraic combinatorics, topology, fourier analysis, and harmonic analysis. Modular Representation theory, the study of representations of finite groups over a field of positive characteristic, has in particular been used in the classification of finite simple groups, and itself finds applications in a variety of areas of mathematics.

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