

Dualities in Representation Theory

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Abstract: After a brief introduction to the basics of representation theory, we shall discuss the representation theory of the symmetric groups and that of the general linear group. We will present Schur duality as a first example of dualities in representation theory that connects the representation theories of the above two groups. We shall then move on to Howe dualities and explain why these are useful in representation theories of Lie superalgebras. Finally, when time permits, we will discuss the notion of super duality which connects representation theories of Lie algebras with that of Lie superalgebras.

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