

COE-Mass weekly seminar series

THE DSI-NRF CENTRE OF EXCELLENCE IN
MATHEMATICAL AND STATISTICAL SCIENCES (CoE-MaSS)
PRESENTS A SEMINAR BY

Prof William Keith

(Department of Mathematical Sciences, Michigan Technological University)

"Connections between Schur functions and major index distributions"

Friday, 15 November 2019 10h30-11h30 CoE-MaSS Seminar Room, 1st floor, MSB, Wits.

We consider the distribution of the major index over all standard Young tableaux with a fixed partition shape and descent number *i*. For several families of shapes and descent numbers (though not all), this distribution quite unexpectedly becomes a principal specialization of a Schur function, which allows us to immediately



conclude their unimodality among other features. This talk will introduce enough of the important definitions to be accessible to non-specialists. We will prove several theorems regarding their connections, concluding with potential future work in the area.

Email: wjkeith@mtu.edu



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