ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO A TALK

# Polytopes, graded rings and the projective coinvariant algebra

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Chaired by Roswitha Rissner | Department of Mathematics

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## ABSTRACT

The coinvariant algebra, the quotient of the polynomial ring in $n$ variables by the ideal generated by positive degree symmetric polynomials, plays a basic role in algebraic combinatorics and the representation theory of the symmetric group, equipping its regular representation with a graded algebra structure. Based on an idea from algebraic geometry, this talk will introduce a degeneration of the coinvariant algebra, the projective coinvariant algebra. This algebra gives a bigraded structure on the regular representation of $S_n$ with interesting Frobenius character, generalising a classical result of Lusztig and Stanley. I will also explain connections to Ehrhart theory, the theory of counting lattice points in polytopes. The talk will partially be based on joint work with Praise Adeyemo, University of Ibadan.

**We hope to see you there!**