

# STOCHASTIC SELF-DUALITY FROM QUANTUM ALGEBRA REPRESENTATIONS

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## ABSTRACT

Duality is a useful tool in the study of interacting particle processes which allows properties of one process to be studied using properties of the dual process. In this talk I explain how representations of  $U_q(sl_2)$  can be used to show self-duality of two types of asymmetric interacting particle processes: the (generalized) asymmetric exclusion process and asymmetric inclusion process. For both processes explicit orthogonal self-duality functions can be calculated and they turn out to be multivariate  $q$ -Krawtchouk and  $q$ -Meixner polynomials.

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