

Macdonald Functions and Quantum Dilogarithm

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The theory of q -Whittaker functions for classical types is known to have a (quantum) cluster algebra realization. In this framework, a natural connection with the quantum dilogarithm is known. We show how this extends to the more general case of Macdonald theory in type A. We propose new Givental-like and Mellin-Barnes-like expressions for the Macdonald functions, and explore their properties. These involve heavy use of quantum dilogarithms.

(ongoing collaboration with M. Bershtein, J.-E. Bourguine, R. Kedem, V. Pasquier and J. Shiraishi).

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