

INTERTWINING OPERATORS FOR HIGHEST WEIGHT MODULES OF QUANTUM SYMMETRIC PAIRS

STEIN MEEREBOER

Classical symmetric pairs consist of a Kac-Moody algebra \mathfrak{g} together with a subalgebra \mathfrak{k} of fixed points under an involutive automorphism of \mathfrak{g} . Quantum symmetric pairs (\mathbf{U}, \mathbf{B}) , as introduced by Letzter and Kolb, provide a quantization of this pair of algebras in the form of a Drinfel'd-Jimbo quantum group \mathbf{U} and a coideal subalgebra \mathbf{B} specializing to the universal enveloping algebras of \mathfrak{g} and \mathfrak{k} . The representation theory of \mathbf{B} is largely unknown. In this talk I will introduce the category of integrable modules for \mathbf{B} . In particular, I will discuss how the structure of highest weight \mathbf{U} -modules as \mathbf{B} -modules implies the asymptotic stability of intertwiners $\text{Hom}_{\mathbf{B}}(L(\lambda), V)$. I will illustrate this with the example of the q -Onsager algebra to derive invariants of completions of highest weight modules.

This is part of a work in progress with S. Kolb (Newcastle U.).