DEFINING RELATIONS FOR QUANTUM SYMMETRIC PAIR COIDEALS OF KAC-MOODY TYPE

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Abstract. Classical symmetric pairs consist of a Kac-Moody algebra $\mathfrak{g}$ together with its subalgebra of fixed points under an involutive automorphism. Quantum analogs of this construction, known as quantum symmetric pairs, replace the fixed point Lie subalgebras of $\mathfrak{g}$ by one-sided coideal subalgebras of the Drinfeld-Jimbo quantum group $U_q(\mathfrak{g})$. In this talk I will explain this construction and give some motivation and examples arising from quantum integrability. Special attention will be drawn to the presentation of these algebras by generators and relations. I will present a novel set of defining relations of inhomogeneous q-Serre type for these quantum symmetric pair coideals, based on two different methods. One uses a projection technique established by Letzter and Kolb, the other builds on q-binomial identities.