

UNIVERSAL QUANTUM GROUPS ASSOCIATED TO A PAIR OF PREREGULAR FORMS

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I will discuss recent joint work with Alexandru Chirvasitu and Xingting Wang (arXiv:1605.06428), where we define the universal quantum group \mathcal{H} that preserves a pair of Hopf comodule maps whose underlying vector space maps are preregular forms defined on dual vector spaces. This generalizes the construction of Bichon and Dubois-Violette (2013), where the target of these comodule maps are the ground field. We also recover the quantum groups introduced by Dubois-Violette and Launer (1990), by Takeuchi (1990), by Artin, Schelter, and Tate (1991), and by Mrozinski (2014), via our construction. As a consequence, we obtain an explicit presentation of a universal quantum group that coacts simultaneously on a pair of N-Koszul Artin-Schelter regular algebras with arbitrary quantum determinant.

Joint work with Alexandru Chirvasitu (University of Washington, Seattle, United States) and Xingting Wang (Temple University, United States).