

APPLYING THE  $q$ -ALGEBRAS  $U'_q(\mathfrak{so}_n)$  TO QUANTUM  
GRAVITY: TOWARDS  $q$ -DEFORMED ANALOG  
OF  $\mathrm{SO}(n)$  SPIN NETWORKS

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Nonstandard  $q$ -deformed algebras  $U'_q(\mathfrak{so}_n)$ , proposed a decade ago for the needs of representation theory, essentially differ from the standard Drinfeld—Jimbo quantum deformation of the algebras  $U(\mathfrak{so}_n)$  and possess with regard to the latter a number of important advantages. We discuss possible application of the  $q$ -algebras  $U'_q(\mathfrak{so}_n)$ , within two different contexts of quantum/ $q$ -deformed gravity: one concerns  $q$ -deforming of  $D$ -dimensional ( $D \geq 3$ ) euclidean gravity, the other applies to 2+1 anti-de Sitter quantum gravity (with space surface of genus  $g$ ) in the approach of Nelson and Regge.