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Leonard L. Scott* (11s21@virginia.edu). *Q-Koszul algebras and small prime considerations in the homological algebra of algebraic groups.*

Recently, Brian Parshall and I have made three conjectures in "Q-Koszul algebras and three conjectures" [arXiv:1405.4419]. Two of the conjectures assert, conceptually, that much of the homological apparatus of Kazhdan-Lusztig theory should apply for $p > 0$ to modules arising appropriately from irreducible quantum enveloping algebra modules (at a root of unity). This is asserted, and in a precise sense, even when the latter irreducible modules do not reduce irreducibly (as they do when p is large enough so that the Lusztig conjecture holds, and the weights are p -regular and in the Jantzen region). The conjectures place no restriction on weights and few restrictions on p (none for type A). I intend to discuss topics related to these conjectures. As time permits, this will include the notions of Q-Koszul and standard Q-Koszul algebras, the subject of the first conjecture in the preprint cited above. (Received July 24, 2014)