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Obstructions to quantization of MV cycles using limits of characters

The apparently elementary question of writing down perfect bases for the irreducible representations of semisimple Lie algebras is a problem which finds its source in surprisingly involved mathematical tools. Two such sources are a version of the geometric Satake equivalence (giving rise to the so-called Mirkovic-Vilonen bases) and a categorification of U_q^- using KLR algebras (giving rise to the so-called dual canonical bases). It has been shown that those two families of bases do not coincide, raising the question of understanding the change of basis matrix. We introduce an algebraic equivariant multiplicity for modules over truncated shifted Yangians through limits of characters, effectively providing a tool to study this change of basis. Moreover, we apply this new notion to study whether, for given MV cycle, there exists a module over a truncated shifted Yangian whose caracteristic cycle is precisely this MV cycle. This is joint work with Joel Kamnitzer.