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**Erik Carlsson\*** ([ecarlsson@math.ucdavis.edu](mailto:ecarlsson@math.ucdavis.edu)), Renaissance apartments, 3000 Lillard apt. 210, Davis, CA 95618. *Geometric representation theory and the shuffle conjectures.*

I will explain a new geometric construction due to E. Gorsky, A. Mellit for the representation of the algebra that appears in my proof of the shuffle conjecture with Mellit. We have discovered that the algebras act on the equivariant K-theory of a certain smooth subscheme of the flag Hilbert scheme, which breaks the  $q,t$ -symmetry. This is the first step towards categorifying these actions, and we hope to find applications to refined knot invariants and other conjectures. (Received September 12, 2017)