## Stated skein algebras and a geometric approach to quantum groups

We introduce a theory of stated SL(n)-skein algebras of surfaces, which provides a geometric/combinatorial interpretation for the quantum function algebras  $O_q(SL(n))$  and other related notions from quantum algebra. They also quantize the SL(n)-character varieties of surfaces, are examples of quantum cluster algebras, and are closely related to Reshetikhin-Turaev quantum invariants of links, factorization homology, and the lattice gauge theory.