Shifted twisted Yangians and finite W-algebras in classical types

Lewis Topley

University of Bath

There is a well-known relationship between finite W-algebras and Yangians. The work of Rogoucy and Sorba on the "rectangular case" in type A eventually led Brundan and Kleshchev to introduce shifted Yangians, which surject onto the finite W-algebras for general linear Lie algebras. Thus, these W-algebras can be realised as truncated shifted Yangians. In parallel, the work of Ragoucy and then Brown showed that truncated twisted Yangians are isomorphic to the finite W-algebra associated to a rectangular nilpotent element in a Lie algebra of type B, C or D. For many years there has been a hope that this relationship can be extended to other nilpotent elements.

I will talk about recent work (joint with K. Lu, Y.-N. Peng, L. Tappeiner and W. Wang) which extends these results to all even nilpotent elements in types B, C and (modulo a conjecture about a central element) to all even nilpotent elements in type D.