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Jonathan S Brown* (jonathan.brown@oneonta.edu). *Shifted twisted Yangians and finite W -algebras*. Preliminary report.

Finite W -algebras are certain algebras used to help study the infinite dimensional representation theory of reductive complex Lie algebras. So far they are best understood in type A. This is because, apart from a few isolated cases, there are only presentations of finite W -algebras in type A. The key result in finding such presentations, due to Brundan and Kleshchev, is that in type A finite W -algebras are quotients of certain algebras called shifted Yangians, which are subalgebras of the Yangian for \mathfrak{gl}_n defined in terms of the Yangian's Drinfeld presentation. For the other classical Lie algebras, the role of Yangians is played by twisted Yangians. In this talk I will review some of the representation theory of reductive Lie algebras, as well as the connection between Lie algebra representation theory and finite W -algebra representation theory. Then I will explain how I have defined a Drinfeld presentation for the twisted Yangian associated to \mathfrak{so}_3 , from which I have defined the shifted twisted Yangian for \mathfrak{so}_3 . This should lead to presentations of a large class of finite W -algebras. (Received September 21, 2015)