

The reduced Dijkgraaf--Witten invariant of knots in the Bloch group of a finite field

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In 2004, W.D. Neumann showed that the complex hyperbolic volume of a hyperbolic 3-manifold M can be obtained as the image of the Dijkgraaf–Witten invariant of M by a certain 3-cocycle. After that, C.K. Zickert gave an analogue of the Neumann's work for free fields containing finite fields. In this talk, I give a simple method to calculate a weaker version of the Zickert's analogue, called the reduced Dijkgraaf–Witten invariant, for finite fields and show a formula for a family of knot complements.