**Knot Theory and Topologically Massive Yang-Mills Theory**[1] TUNA YILDIRIM, VINCENT RODGERS, The University of Iowa, PARAMESWARAN NAIR, City College of the CUNY, SUZANNE CARTER[2], The University of Iowa — In 2+1 dimensions, we study Yang-Mills(YM) + Chern-Simons(CS) theory also known as topologically massive Yang-Mills(TMYM) theory. Using geometric quantization method we calculate the Wilson Loop expectation values of TMYM theory. At large distances, where only the topological theory survives, we obtain a condition that makes skein relations of knot theory useful to calculate Wilson loop expectation values of TMYM theory. These link invariants may lead to a better understanding of mass gap in 2+1 dimensions.

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