

## WHEN QUANTUM INVARIANTS MEET GEOMETRY

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The story of quantum invariants of knots started in 1984 with the Jones polynomial. Later on, Reshetikhin and Turaev developed in 1991 a method that having as an input any quantum group leads to link invariants. This construction is purely algebraic and combinatorial. We will explain this tool focusing on the quantum enveloping algebra of  $sl(2)$ . Using its representation theory one obtains the coloured Jones polynomials  $J_N(q)$ . For the simplest case  $N = 2$  one can get the Classical Jones polynomial. Lawrence and Bigelow described the Jones polynomial as a certain graded intersection pairing in a covering of the configuration space on the punctured disk. If time permits, in the last part of the talk we will present this interpretation.

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