

ON KONTSEVICH INTEGRAL OF TORUS KNOTS

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The Kontsevich integral is a powerful invariant of knots which was introduced in 1993. It takes its values in a space of diagrams lying on a circle. By applying some transformation called “unwheeling”, this invariant may be viewed as a series of monotrivalent diagrams. This series remains hard to compute as it is completely known only for the trivial knot. By rationality results of S. Garoufalidis and A. Kricker, this series is coded by closed trivalent graphs colored by rational functions. We will construct explicitly a series of diagrams made of circles joined together in a tree-like fashion and colored by some special rational functions and we will explain why this series codes exactly the unwheeled Kontsevich integral of torus knots.

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