A virtual knot with virtual unknotting number one and \( n \)-writhes.

Satoh and Taniguchi introduced the \( n \)-th writhe \( J_n \) for each non-zero integer \( n \), which is an invariant for virtual knots. The \( n \)-writhes give the coefficients of a lot of polynomial invariants for virtual knots including the index polynomial, the odd writhe polynomial and the affine index polynomial. The virtualization of a real crossing is an unknotting operation for virtual knots. Relationship between some local moves and the \( n \)-writhes is known. However relationship between a virtualization and the \( n \)-writhes has not been clarified. In this talk, we show that for any given non-zero integers \( n \) and \( N \), there exist a virtual knot whose virtual unknotting number is one and \( n \)-writhe is \( N \). As a result, we can see that all the polynomial invariants whose coefficients are \( n \)-writhes cannot evaluate the distance for virtual knots by virtualizations. (Received January 28, 2019)