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**Louis H. Kauffman\*** ([kauffman@uic.edu](mailto:kauffman@uic.edu)), Math UIC, 851 South Morgan Street, Chicago, IL 60607-7045. *The Flat Bracket Invariant for Virtual Knots, Links and Strings*. Preliminary report.

This talk introduces a new invariant of virtual knots, links and strings due to the author. The invariant, called the "flat bracket" is a generalization of the bracket polynomial for virtual knots. The flat bracket takes its values in the commutative ring generated by equivalence classes of flat virtual knots and links (also called virtual strings) with coefficients in the ring of Laurent polynomials  $Z[A, A^{-1}]$ . This new invariant can distinguish many difficult cases such as the flat Kishino diagram and it behaves differently on long virtuals than it does on closed virtuals. This allows the invariant to pinpoint the non-triviality of many examples of long virtuals whose closures are trivial. The talk will discuss the relationship of this invariant with the Miyazawa polynomial and with the possibilities for categorification of the invariant. (Received December 29, 2006)