1006-57-104 **Louis H. Kauffman*** (`kauffman@uic.edu`), Math UIC, 851 South Morgan Street, Chicago, IL 60607-7045, and **Sofia Lambropoulou** (`sofia@math.ntua.gr`), National Technical University of Athens, Department of Mathematics, Zografou Campus, GR-157 80, Athens, Greece. *Tangles and Virtual Tangles.* Preliminary report.

This talk will consider various phenomena related to tangle cancellation and the absence of tangle cancellation. In particular we give an infinite class of sums of rational tangles $S + T$ such that the numerator $N(S + T)$ is unknotted while the tangle $S + T$ is non-trivial. These unknot diagrams can be modified to produce infinitely many distinct unknot diagrams, each requiring non-simplifying Reidemeister moves for their unknotting. The talk will also consider the classification of virtual tangles and the use of virtual tangles to produce virtual knots that are difficult to detect (this part of the talk involves joint work with Heather Dye). (Received February 09, 2005)