1133-37-66 **Yunping Jiang*** (yunping.jiang@qc.cuny.edu), Department of Mathematics, Queens College of CUNY, 65-30 Kissena Blvd, Flushing, NY 11358. *Higher Order Oscillating Sequences, Affine Distal Flows on the d-Torus, and Sarnak's Conjecture.* Preliminary report.

In this paper, we give two precise definitions of a higher order oscillating sequence and show the importance of this concept in the study of Sarnak's conjecture. We prove that any higher order oscillating sequence of order d is linearly disjoint from all affine distal flows on the d-torus for all $d \geq 2$. One consequence of this result is that any higher order oscillating sequence of order 2 is linearly disjoint from all affine flows on the 2-torus with zero topological entropy. In particular, this confirms Sarnak's conjecture for all affine flows on the 2-torus with zero topological entropy and for all affine distal flows on the d-torus for all $d \geq 2$. (Received July 09, 2017)