

MAR14-2013-020175

Abstract for an Invited Paper  
for the MAR14 Meeting of  
the American Physical Society

### **Equivalence of phase oscillator models**

ANTONIO POLITI, University of Aberdeen

Various types of phase-oscillator models are discussed to identify mutual analogies and differences. In particular, an ensemble of leaky-integrate-and-fire neurons is compared with both Winfree- and Kuramoto-type models, showing that, contrary to the common belief, relevant differences are maintained even in the weak coupling limit. The comparison is mostly made by studying the linear stability of the splay state and its possible bifurcations.