1125-65-1479 **Jonathan D Hauenstein***, 152C Hurley Hall, Notre Dame, IN 46556, and **Owen Coss**, **Hoon Hong** and **Daniel K Molzahn**. *Computing the real equilibrium points of the standard Kuramoto model.* Preliminary report.

The standard Kuramoto model (all-to-all uniform coupling) is used to describe synchronization behavior of a large set of oscillators. The equilibrium points of this model can be computed by solving a system of polynomial equations using algebraic geometry. We develop an approach to compute only the real equilibrium points by reducing down to solving a univarite polynomial and compare it with other computational algebraic geometric approaches. Analyzing this univariate approach allows us to prove that, asymptotically, the maximum number of real equilibrium points grows at the same rate as the number of complex equilibrium points. Although the maximum number of real equilibrium points is still an open question for four or more oscillators, we conjecture an upper bound for any number of oscillators which generalizes the known cases and is obtained with explicitly provided natural frequencies. (Received September 17, 2016)