



DEPARTMENT OF APPLIED MATHEMATICS

應 用 數 學 系

**The Hong Kong Polytechnic University  
Department of Applied Mathematics**

**Colloquium**

**Oscillator death induced by amplitude-dependent coupling in  
repulsively coupled oscillators**

by

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**Abstract**

The effects of amplitude-dependent coupling on oscillator death (OD) are investigated for two repulsively coupled Lorenz oscillators. Based on numerical simulations, it is shown that as constraint strengths on the amplitude-dependent coupling change, an oscillatory state may undergo a transition to an OD state. The parameter regimes of the OD domain are theoretically determined, which coincide well with the numerical results. An electronic circuit is set up to exhibit the transition process to the OD state with an amplitude-dependent coupling. These findings may have practical importance on chaos control and oscillation depression.

**Date : 26 July, 2018 (Thursday)**

**Time : 3p.m. – 4p.m.**

**Venue : P117, The Hong Kong Polytechnic University**

**\* \* \* ALL ARE WELCOME \* \* \***