Contribution ID: **327** Type: **Poster**

Fractal dimension of synthesized sound wave

Wednesday 24 May 2017 15:45 (15 minutes)

An important aspect of musical structure that allows discrimination between different sounds is the timbral characteristic. Although, there has been significant interest in the application of fractal theory as a tool for the analysis of musical structure, no such study has been done to investigate timbre on physical modeling sound synthesis. In this paper, we examine the changes of timbre and estimate fractal dimension of musical signals which synthesizes by three physical modeling methods: Karplus-Strong algorithm, functional transformation, direct numerical simulation. The results indicate that fractal analysis can identify the timbral characteristic regarding the underlying physical factors that distinguish the different between sounds.

Authors: Dr CHIANGGA, Surasak (Department of Physics, Faculty of Science, Kasetsart University); Mr KANJANAPEN, Manorth (Department of Physics, Faculty of Science, Kasetsart University)

Presenter: Mr KANJANAPEN, Manorth (Department of Physics, Faculty of Science, Kasetsart University)

Session Classification: Poster Presentation I

Track Classification: Optics, Non-linear optics, Laser Physics, Ultrafast Phenomena