

Abstract Submitted
for the OSS15 Meeting of
The American Physical Society

Synchronization of Huygens' Clocks: An Elementary Treatment

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ANDREW SLFIKIN, Psychology Dept, Cleveland State University — Huygens proposed a general model to explain the synchronization of two oscillators. We describe synchronization of two pendulums mounted on a cart. The cart moves along the horizontal: the motion is damped. We show that the principle of conservation of momentum can be used to describe an escapement mechanism. Simple graphical methods are used to show that the motion of the two pendulums can be described in terms of a symmetric and anti-symmetric “mode.” We quantify the damping of the pendulums and show that the two modes are described by two different damping constants. We discuss that this property explains why only the anti-symmetric mode “survives” for long time; i.e., the two pendulums are synchronized. We discuss direction for future investigation.

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Date submitted: 22 Feb 2015

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