

Abstract Submitted
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Contour integrals and period formulae of the tautochrone
MATTHEW COMMONS, MICHAEL CRESCIMANNO, Youngstown State University — In 1673, C. Huygens determined that a pendulum whose string is restricted to wind around a cycloid curve has a peculiar property: its period is “tautochronic”, that is, independent of its amplitude. Though initially of interest for precision time, we discuss this curious result from the perspective of symmetries and topology of the period integral. We demonstrate this phenomenon in measurements by J. George using a 3d printed cycloidic guide.

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