The Pendulum Swings

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Abstract

The trigonometric functions sine and cosine may be defined and studied as solutions to a pair of linear first-order ODEs. Replacement of this pair by a related nonlinear triple leads to the theory of elliptic functions, which may likewise be developed in ODE terms. Elliptic functions are connected with an impressive list of illustrious mathematicians and have numerous applications within mathematics. We shall give a very modest introduction to this universe.