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Sinopsis

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Shortly after the invention of differential and integral calculus, the calculus of variations was developed. The new calculus looks for functions that minimize or maximize some quantity, such as the brachistochrone problem, which was solved by Johann Bernoulli, Leibniz, Newton, Jacob Bernoulli and l'Hôpital and is sometimes considered as the starting point of the calculus of variations. In Woodhouse's book, first published in 1810, he has interwoven the historical progress with the scientific development of the subject.

The reader will have the opportunity to see how calculus, during its first one hundred years, developed by seemingly tiny increments to become the highly polished subject that we know today. Here, Woodhouse's interweaving of history and science gives his special point of view on the mathematics. As he states in his preface: "Indeed the authors who write near the beginnings of science are, in general, the most instructive; they take the reader more along with them, show him the real difficulties and, which is the main point, teach him the subject, the way they themselves learned it."

Readership

Graduate students and research mathematicians.

Reviews

"Those interested in the beginnings of the Calculus of Variations should read the book by Lagrange and the--unfortunately, very rare--book by Woodhouse. Euler's masterpiece [Methodus ...] will then offer him very little difficulty. This work of Euler's is distinguished by the abundance of its examples and is one of the most interesting books that the mathematical literature has to offer."

-- C. Carathéodory, in *Variationsrechnung und Partielle Differentialgleichungen erster Ordnung*

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"[Woodhouse's] work details the history of the Calculus of Variations from its origin until the close of the eighteenth century and has obtained a high reputation for accuracy and clearness."

-- I. Todhunter

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