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ERNST MACH

The Science of Mechanics: A Critical and Historical Account of Its Development

Trans. by Thomas J. McCormack. Ed. 3, rev. Chicago: Open Court, 1907. (First published in German in 1883; standard English translation first published in 1893.)

Mach emphasized the empirical basis of all scientific phenomena and criticized concepts that were purely theoretical or metaphysical. He highlighted the role of the observer in physics and the fact that all meaningful scientific laws must be verified operationally by the observer. His approach was to present a history of mechanics that exemplified his philosophy of science. The history of science today emphasizes social context and tends to avoid critical engagement with technical content. By contrast, Mach's account of past mechanics was consistently based on an exploration of the ideas underlying each advance in physics. The theories and laws of past mechanics were explained in a way that allowed the reader to appreciate the character and interest of these advances. As a graduate student I was inspired by Mach's way of writing history, in which philosophical advocacy was combined with clear and stimulating exposition of the technical content of each stage in the history of mechanics.

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