

T4_24 THE PROBLEM WITH SO-CALLED FICTITIOUS FORCES

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Abstract In a historical review Newton's laws and his ideas about absolute space will be discussed in the light of early critics by Leibniz and Berkeley and later by Mach. Based on a series of examples from modern textbooks the question will be raised if the traditional approach to teach the basics of Newton's mechanics is still adequate, especially when inertial forces like centrifugal forces are described as fictitious, applicable only in non-inertial frames of reference. In the light of some recent research, based on Mach's principles and early work of Weber, it is argued that the so-called fictitious forces could be described as real interactive forces and therefore should play quite a different role in the frame of Newton's mechanics. By means of some computer supported learning material it will be shown how these ideas could be implemented.