

SMOOTH INFINITESIMAL ANALYSIS AND PHYSICS

JOHN L. BELL

In the past physicists showed no hesitation in employing infinitesimal methods, the use of which in turn relied on the implicit assumption that the (physical) world is smooth, or at least that the maps encountered there are differentiable as many times as needed. For this reason smooth infinitesimal analysis provides an ideal framework for the rigorous derivation of results in classical physics. A number of such applications are presented in this paper.

DEPARTMENT OF PHILOSOPHY, UNIVERSITY OF WESTERN ONTARIO, CANADA
E-mail address: jbell@uwo.ca