

Smale, Stephen

Newton's contribution and the computer revolution.

Math. Medley 17, No. 2, 51 – 57 (1989).

This popular talk (originally delivered at the International Conference on Numerical Analysis held at the National University of Singapore from May 31, 1988 to June 4) discusses the computer from the point of view of a physicist rather than that of an engineer. The talk describes "a search for the laws of computation – a mathematical picture of the process of computation" (p. 51). Some of Newton's achievements are discussed to explain a Turing machine and some criticisms are offered from the standpoint of the continuous mathematician (i.e., the Turing machine does not relate to scientific computing; the notion of multiplication; and so on). The author did not revise the final written transcript of his lecture.

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