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Ashvin Anand Swaminathan* (aaswaminathan@college.harvard.edu), 388 Eliot Mail Center, Harvard College, 101 Dunster Street, Cambridge, MA 02138, and **Simon Rubinstein-Salzedo** (complexzeta@gmail.com). *Analysis on Surreal Numbers: Functions and Integration.*

The class **No** of surreal numbers possesses a rich numerical structure and shares many arithmetic and algebraic properties with the real numbers, and some work has also been done to develop analysis on **No**. In this talk, we propose surreal definitions of the arctangent and logarithm functions using truncations of Maclaurin series. Moreover, by defining a new topology on **No**, we obtain the Intermediate Value Theorem even though **No** is not Cauchy complete, and we prove that the Fundamental Theorem of Calculus would hold for surreals if a consistent definition of integration exists. (Received September 18, 2015)