1078-60-159 **Frederik Herzberg***, Bielefeld University, Institute of Mathematical Economics, Universitaetsstrasse 25, D-40215 Bielefeld, Germany. *Towards 'radically elementary' stochastic analysis.*

In his monograph *Radically Elementary Probability Theory* [Annals of Mathematics Studies, vol. 117 (1987)], Edward Nelson has laid the foundations of a theory of continuous-time stochastic processes that is accessible to "anyone who can add, multiply, and reason". This talk will summarize ongoing research which, on the basis of Nelson's work, develops a 'radically elementary' approach to stochastic analysis and its manifold applications, especially in financial mathematics and quantum mechanics. (Received December 05, 2011)