1106-44-1941 **Lance Nielsen*** (lnielsen@creighton.edu), Department of Mathematics, Creighton University, Omaha, NE 68178. *Towards a Comprehensive Stability Theory for Feynman's Operational Calculus: The Time Independent and Time-Dependent Settings.* Preliminary report.

Via a general construction, we are able to establish a quite general and comprehensive stability theory for Feynman's operational calculus (forming functions of noncommuting operators) in the time independent setting. In particular, we are able to establish stability of the operational calculus with respect to general types of the time-ordering measures. While the domain of the operational calculus is somewhat restricted as compared to the "standard" version of the operational calculus (established by Jefferies and Johnson), the advantages of this relatively minor domain restriction are significant in that the stability theory (with respect to the time-ordering measures) as it stands at this time is contained, essentially in its entirety, in the principle result of the time independent setting.

The same construction used in the time independent setting leads to essentially the same result for the "standard" version of the operational calculus (with the same slight restriction of the domain) in the time-dependent setting, with only a mild change in order to accommodate the presence of time-dependent operators; i.e., operator-valued functions. As above, much of the existing stability theory for the time-dependent setting is contained in the principle result. (Received September 15, 2014)