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**G Edgar Parker\*** (parkerge@jmu.edu), Department of Mathematics and Statistics, James Madison University, Harrisonburg, VA, and **James S Sochacki** and **David C Carothers**. *Why the Universe MUST be Complicated*. Preliminary report.

Models in physics for the interaction of forces routinely consist of coupled systems of differential equations, and the Newtonian paradigm, based upon the interaction of forces, yields locally analytic solutions. From a philosophical perspective, if differential equations are to be used for such mathematical models, this coupling appears to be essential to capturing the effect of forces acting on each other. Granted that a mathematical model for physical interaction must take this coupled form, we argue that the functions that solve the system, to be analytic, must exhibit severe pathology. A heuristic argument is offered that indicates the plausibility that functions that model such physical interactions cannot be even C1. Basic ideas driving the pertinent mathematics that supports the arguments will be presented and sources for the mathematics referenced. (Received September 25, 2006)