1056-Z1-791 **Harshini Fernando***, Purdue University North Central, 1401 S. US Hwy 421, Westville, IN 46391. *Likelihood Inference for Nonlinear Regression Models.*

We consider a special case of the nonlinear model. In the linear regression model when the design matrix X is a function of unknown parameters, it is a conditionally linear nonlinear regression models. We develop new techniques for making inferences about the unknown parameters in the conditionally linear nonlinear model. Closed form expressions for the robust likelihood functions for unknown parameters are derived, against departures from the normal errors in the direction of spherically contoured error distributions. Several well-known examples are considered and Monte Carlo simulation results are presented. (Received September 17, 2009)