A Classification of Nonlinear Regression Models and Parameter Confidence Regions

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Abstract: This is mainly a survey paper with a new look on comparison of confidence regions. It is divided into two parts. In the first part we compare classes of nonlinear regression models having some linear-like property (intrinsically linear models, models with constant information matrices, models with zero Riemannian curvature). In the second part we discuss four kinds of regions as candidate for being confidence regions for parameters: the elliptical region, the likelihood region, the linear inference region, and finally a confidence region proposed recently by the author.