



*Invited Speaker*

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“A framework for developing generalized asymmetric distributions and regression models”

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**Abstract**

During the recent decade, there have been an active research in developing new and more flexible statistical distributions with more parameters for the purpose of fitting more complicated real world phenomena. A huge number of new distributions were developed using the T-RY framework. One critical criticism is that many of these new distributions with many parameters may not be practically useful. Although they can fit broader types of data, these parameters often do not have meaningful interpretations. Practically useful distributions often have three parameters (location, scale and shape parameters). However, such three-parameter distributions often are limited to fit a wide range of skewed data. In this talk, a brief review of methods for developing three-parameter asymmetric distributions will be reviewed. A framework will be proposed to derive three-parameter generalized asymmetric distributions that are capable of fitting a wide range of skewed (left and right) data. Some special cases will be discussed and compared with other more complex distributions. Generalized regression models with response following generalized asymmetric distributions will be discussed. A generalized asymmetric logistic regression model will be presented and applied to model finance and failure time data.