1067-62-170   **Brian T Rooks*** (`btrooks@email.unc.edu`), 1222 Abbotts Creek Circle, Kernersville, NC 27284, and **Amy C Schumacher** (`acschuma@bsc.edu`), 258 Bouldincrest Ave., Collierville, TN 38017.
The Power Cauchy Distribution: Derivation, Description, and Composite Models.

First, a new two-parameter member of the transformed beta family (Venter 1983), called the Power Cauchy distribution, is derived and described. The new model has increased statistical usefulness when compared to other members of the transformed beta family because of the thicker upper tail of the density. Second, this distribution is combined with the Pareto distribution using the procedure introduced by Cooray and Ananda (2005). This combination increases the thickness of the right tail of the distribution in order to more accurately fit highly positively skewed data. Third, this model is improved upon with the addition of a mixing parameter as was recommended by Scollnik (2007). Using medical data sets, parameter estimation by the maximum likelihood method and related goodness of fit tests are performed in order to compare the models with other known models. (Received July 28, 2010)