



SOCIETY OF ACTUARIES

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Ratemaking Using the Tweedie Model

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The Tweedie distribution, featured with a mass at zero, is convenient for insurance claims modeling and pure premium determination for general insurance. Motivated by the fact that an insurance policy typically provides multiple types of coverage, we propose a copula-based multivariate Tweedie regression for modeling the semi-continuous claims while accommodating the association among different types. The proposed approach also allows for dispersion modeling, resulting in a multivariate version of the double generalized linear model. We demonstrate the application in insurance ratemaking using a portfolio of automobile insurance policyholders in the state of Massachusetts in the US.