

COLLOQUIUM

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**On a generalization of the
three parameter crack
distribution for loss
modeling**



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Abstract: The three parameter crack distribution family which includes the Inverse Gaussian, location biased Inverse Gaussian and Birnbaum-Saunders distribution as special cases, has received great attentions not only for failure time modeling but also for actuarial/financial applications. Since the crack distribution is constructed based on the normal stress (fatigue) distribution, its distributional properties are essentially inherited from the normal distribution, which can impose limitations for some applications. In this talk, we will discuss the construction of more general classes of models using various stress densities including heavy tailed ones. Some key distributional properties, methods for simulation and parameter estimation, and applications based on real loss data will be presented.