

GRADUATE SEMINAR

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Some Probability Properties of the Crack Distribution

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3:30 PM

Math and Stat Lounge CW 307.20

Abstract: The three parameter Crack distribution is useful for statistical analysis in prospective studies connected with the engineering problem of fatigue crack development in a metallic plate under some kind of pressure loading. As special cases it contains such well known distributions as the Birnbaum-Saunders distribution, the Inverse Gaussian distribution, and the Length Biased Inverse Gaussian distribution. These distributions are all related and have their own characteristics.

In this talk I will present new, more direct and more mathematically appealing methods for obtaining the distribution function and the moment generating function for the Crack distribution. I will provide new probability properties of the Crack distribution. Finally I will speak on a rigorous general probabilistic model for the growth of two-sided cracks.