

# **An Environmental Impact Evaluation Model Generated by Compound Probability Distributions**

**Devin Akman<sup>1</sup> and Olcay Akman<sup>2</sup>**

**1: University of Illinois at Urbana-Champaign**

**2:Illinois State University**

## **Abstract**

The problem of empirically identifying the underlying distribution of a parameter in a compound distribution has not been satisfactorily addressed in the fields of environmental effect and frailty modeling. We introduce Particle Swarm Optimization as a method to generate an approximate distribution by minimizing the error of the associated marginal distribution. We demonstrate the correctness of our approach via Monte Carlo methods.