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**The skew-normal distribution on the simplex.** (English) Zbl 1315.60023  
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Summary: Density functions on the simplex defined with respect to the Lebesgue measure can change from unimodality to multimodality with perturbation. This phenomenon is induced by the incompatibility of the Aitchison geometry and the Lebesgue measure. A Lebesgue-type measure, compatible with the algebraic geometric structure of the simplex, is used here to define the skew-normal density on the simplex as the Radon-Nykodym derivative with respect to it. Similarities and differences between the densities obtained using the different measures are analyzed.

**MSC:**

60E05 Probability distributions: general theory

Cited in **1** Review  
Cited in **5** Documents

**Keywords:**

Aitchison geometry; constrained sample space; random composition

**Full Text:** [DOI](#)

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