

**A POWER SERIES EXPANSION FOR THE SKEW NORMAL  
DISTRIBUTION FUNCTION**

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**Summary**

Univariate skew symmetric models have been considered by several authors and a classical example is the skew normal distribution. The distribution theory literature related to the skew normal distribution has grown rapidly in recent years, and a number of extensions and alternative formulations have been put forward. For the first time, we propose a simple power series expansion for the skew normal cumulative distribution. We also obtain a power series expansion for its quantile function. We perform some numerical studies of these series to determine regions where they converge rapidly.

**Keywords:** Normal distribution, normal quantile function, power series expansion, skew normal distribution, skew normal quantile function, Owen's function.

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