

# An Introduction to the Sinh-arcsinh Transformation and Distributions Arising from it

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## Summary

In this talk I will present the main findings from the soon to be published Jones & Pewsey (2009). In that paper, we introduce the ‘sinh-arcsinh transformation’ and employ it to define the ‘sinh-arcsinh family of distributions’. The four-parameter location-scale extension of the family contains symmetric as well as asymmetric members and allows for tailweights that are both heavier and lighter than those of the transformed generating distribution. When the generating distribution is standard normal, the ‘normal sinh-arcsinh (NSAS) class of distributions’ is obtained. The NSAS class is highly tractable and has many appealing properties. Likelihood based inference for the NSAS class will be considered and applied in the analysis of real data. Finally, the options used within the sinh-arcsinh formulation, as well as its extension, will be discussed.

## Reference

Jones, M.C. & Pewsey, A. (2009) Sinh-arcsinh distributions. *Biometrika*. In press.  
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