

## ACKNOWLEDGMENT OF PRIORITY USAGE OF THE LAMBERT $W$ FUNCTION IN STATISTICS

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In my 2011 *Annals of Applied Statistics* article [Goerg (2011)] I wrote that “Whereas the Lambert  $W$  function plays an important role in mathematics, physics, chemistry, biology and other fields, it has not yet been used in statistics.” This was incorrect. At the time of publication I was unaware of Stehlík (2003), who used the Lambert  $W$  function to derive the exact distribution of the likelihood ratio test statistic. He has also used it in more recent work such as Stehlík (2006), Stehlík et al. (2010), or Stehlík (2014) amongst others. While Stehlík’s use of the Lambert  $W$  function was focused on the distribution of the likelihood ratio test statistic, my work dealt with the modeling of skewed random variables and symmetrizing data using the Lambert  $W$  function as a variable transformation.

I thus want to take this opportunity to acknowledge that Stehlík has used the Lambert  $W$  function prior to my usage in Goerg (2011).

### REFERENCES

- GOERG, G. M. (2011). Lambert  $W$  random variables—a new family of generalized skewed distributions with applications to risk estimation. *Ann. Appl. Stat.* **5** 2197–2230. [MR2884937](#)
- STEHLÍK, M. (2003). Distributions of exact tests in the exponential family. *Metrika* **57** 145–164. [MR1969249](#)
- STEHLÍK, M. (2006). Exact likelihood ratio scale and homogeneity testing of some loss processes. *Statist. Probab. Lett.* **76** 19–26. [MR2213239](#)
- STEHLÍK, M. (2014). Exact testing of the scale parameter with the missing time-to-failure information. *Commun. Dependability Qual. Manag.* **10** 124–129.
- STEHLÍK, M., POTOCKÝ, R., WALDL, H. and FABIÁN, Z. (2010). On the favorable estimation for fitting heavy tailed data. *Comput. Statist.* **25** 485–503. [MR2720398](#)

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