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Weibull tail-distributions: A bibliography

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Weibull tail-distributions are defined through their distribution function by:

$$F(x) = 1 - \exp \left\{ -x^{1/\theta} \ell(x) \right\} \quad (1)$$

where ℓ is a slowly-varying function, see Table 1 for examples. There exist numerous estimators of $\theta > 0$. Berred [5] uses record values while most of estimators are based on the largest observations of the sample: Asimit *et al.* [1], Beirlant *et al.* [2, 3, 4], Broniatowski [6], Diebolt *et al.* [7, 8], Dierckx *et al.* [9], Gardes *et al.* [10, 11, 12, 13, 17], Girard [14] and Goegebeur *et al.* [15, 16].

References

- [1] V. Asimit, D. Li, and L. Peng. Pitfalls in using Weibull tailed distributions. *Journal of Statistical Planning and Inference*, 140:2018–2024, 2010.
- [2] J. Beirlant, C. Bouquiaux, and B. Werker. Semiparametric lower bounds for tail index estimation. *Journal of Statistical Planning and Inference*, 136:705–729, 2006.
- [3] J. Beirlant, M. Broniatowski, J.L. Teugels, and P. Vynckier. The mean residual life function at great age: applications to tail estimation. *Journal of Statistical Planning and Inference*, 45:21–48, 1995.
- [4] J. Beirlant, J.L. Teugels, and P. Vynckier. *Practical analysis of extreme values*. Leuven University Press, Leuven, Belgium, 1996.
- [5] M. Berred. Record values and the estimation of the Weibull tail-coefficient. *Comptes-Rendus de l'Académie des Sciences*, T. 312, Série I:943–946, 1991.
- [6] M. Broniatowski. On the estimation of the Weibull tail coefficient. *Journal of Statistical Planning and Inference*, 35:349–366, 1993.
- [7] J. Diebolt, L. Gardes, S. Girard, and A. Guillou. Bias-reduced estimators of the Weibull tail-coefficient. *Test*, 17:311–331, 2008.
- [8] J. Diebolt, L. Gardes, S. Girard, and A. Guillou. Bias-reduced extreme quantiles estimators of Weibull tail-distributions. *Journal of Statistical Planning and Inference*, 138:1389–1401, 2008.

- [9] G. Dierckx, J. Beirlant, D. De Waal, and A. Guillou. A new estimation method for Weibull-type tails based on the mean excess function. *Journal of Statistical Planning and Inference*, 139(6):1905–1920, 2009.
- [10] L. Gardes and S. Girard. Estimating extreme quantiles of Weibull tail-distributions. *Communication in Statistics - Theory and Methods*, 34:1065–1080, 2005.
- [11] L. Gardes and S. Girard. Comparison of Weibull tail-coefficient estimators. *REVSTAT - Statistical Journal*, 4(2):163–188, 2006.
- [12] L. Gardes and S. Girard. Estimation of the Weibull tail-coefficient with linear combination of upper order statistics. *Journal of Statistical Planning and Inference*, 138:1416–1427, 2008.
- [13] L. Gardes, S. Girard, and A. Guillou. Weibull tail-distributions revisited: a new look at some tail estimators. *Journal of Statistical Planning and Inference*, 141(1):429–444, 2011.
- [14] S. Girard. A Hill type estimate of the Weibull tail-coefficient. *Communication in Statistics - Theory and Methods*, 33(2):205–234, 2004.
- [15] Y. Goegebeur, J. Beirlant, and T. de Wet. Generalized kernel estimators for the Weibull-tail coefficient. *Communications in Statistics - Theory and Methods*, 39(20):3695–3716, 2010.
- [16] Y. Goegebeur and A. Guillou. Goodness-of-fit testing for Weibull-type behavior. *Journal of Statistical Planning and Inference*, 140(6):1417–1436, 2010.
- [17] J. El Methni, L. Gardes, S. Girard, and A. Guillou. Estimation of extreme quantiles from heavy and light tailed distributions. *Journal of Statistical Planning and Inference*, 142(10):2735–2747, 2012.

Distribution	θ
Gaussian $\mathcal{N}(\mu, \sigma^2)$	$1/2$
Gamma $\Gamma(\alpha, \lambda)$	1
Weibull $\mathcal{W}(\alpha, \lambda)$	$1/\alpha$

Table 1: Weibull tail-distributions