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Brice Merlin Nguelifack* (nguelifa@usna.edu), 1116 August Drive, Annapolis, MD 21403,
and **Eddy Kwessi**. *Robust Signed-Rank Variable Selection in Monotone Single-Index Models with
Wavelets via the Adaptive LASSO*.

A robust signed-rank estimation and variable selection for monotone single-index models is considered in this paper. A single-index model assumes that the expectation of the outcome is an unknown function of a linear combination of covariates. Assuming monotonicity of the unknown function is often reasonable, and allows for more straightforward inference. Wavelet are used to estimate the unknown function. The proposed estimator and selection procedure have an oracle property. Optimality of the robust signed-rank approach for data with long-tail, contaminated errors and, data containing high-leverage points is validated via finite sample simulations. A practical application is provided. (Received August 29, 2018)