

**T. Kozubowski**

UNIVERSITY OF NEVADA, RENO

e-mail: [tkozubow@unr.edu](mailto:tkozubow@unr.edu)

**Krzysztof Podgorski**

CENTRE FOR MATHEMATICAL SCIENCES, MATHEMATICAL STATISTICS, LUND UNIVERSITY, SWEDEN

## **Skew Laplace Distributions: Theory and Some Applications in Biology**

Skew Laplace distributions, which naturally arise in connection with random summation and quantile regression settings, offer an attractive and flexible alternative to the normal (Gaussian) distribution in a variety of settings where the assumptions of symmetry and short tail are too restrictive. In particular, this model has been recently found useful for gene selection and classification methods in analysis of microarray data sets. In another application, it was observed that the Laplace distribution adequately represents the size distribution of microbial cells. We shall present fundamental properties of this model, which give insight into its applicability in these areas, and discuss its extensions to multivariate models, time series, and stochastic processes.