# New models for multivariate extremes – a construction principle and related properties -

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A multivariate extreme value distribution (MEVD) is characterized by its spectral measure. A possible way to describe a specific model for a MEVD is via its spectral density, i.e., when the spectral measure has a density. Although a few parametric models already exist for the bivariate case, the number of flexible parametric models in higher dimensions is relatively small. We present a principle how new (parametric) models can be constructed by a suitable composition of lower-dimensional spectral densities. This generalizes the so-called pairwise beta model introduced in the literature recently (Cooley et al., 2010). Furthermore, we discuss some related properties of this new class of models, for instance the possible range of the pairwise extremal coefficients, and apply it to a wind speed data set.

## References

[1] Cooley, D., Davis, R. A., Naveau, P. *The pairwise beta distribution: A flexible parametric multivariate model for extremes*, J. Multivariate Anal., 101, pp. 2103–2117, 2010.