

## **New copulas based on general partitions-of-unity and their applications to risk management**

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**Abstract:** We construct new multivariate copulas on the basis of a generalized countably infinite partition-of-unity approach. This approach allows - in contrast to finite partition-of-unity copulas - for tail-dependence as well as for asymmetry. A possibility of fitting such copulas to real data from quantitative risk management is also pointed out.

### **References:**

C. Cottin and D. Pfeifer: From Bernstein polynomials to Bernstein copulas. *Journal of Applied Functional Analysis* (2014), 277 – 288.

D. Pfeifer and D. Lauterbach: Some Extensions of Singular Mixture Copulas. In: M. Halin, D. Mason, D. Pfeifer, J. Steinebach (Eds.): *Mathematical Statistics and Limit Theorems - Festschrift in Honour of Paul Deheuvels*, Springer (2015), Heidelberg, 271 - 286.

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