## Multivariate Operational Risk: Dependence Modelling with Lévy Copulas

Klaus Böcker\* and Claudia Klüppelberg†

## Presented at Enterprise Risk Management Symposium Society of Actuaries

Chicago, IL

March 28-30, 2007

Copyright 2007 by the Society of Actuaries.

All rights reserved by the Society of Actuaries. Permission is granted to make brief excerpts for a published review. Permission is also granted to make limited numbers of copies of items in this monograph for personal, internal, classroom or other instructional use, on condition that the foregoing copyright notice is used so as to give reasonable notice of the Society's copyright. This consent for free limited copying without prior consent of the Society does not extend to making copies for general distribution, for advertising or promotional purposes, for inclusion in new collective works or for resale.

<sup>\*</sup> Risk Reporting & Risk Capital, HypoVereinsbank AG, M"unchen, email: klaus.boecker@hvb.de

<sup>&</sup>lt;sup>†</sup> Center for Mathematical Sciences, Munich University of Technology, D-85747 Garching bei M¨unchen, Germany, email: cklu@ma.tum.de, www.ma.tum.de/stat/

## **Abstract**

Simultaneous modelling of operational risks occurring in different event type/business line cells poses the challenge for operational risk quantification. Invoking the new concept of Lévy Copulas for dependence modelling yields simple approximations of high quality for multivariate operational VAR.