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Wei Li* (wei.li@wsu.edu), 1630 NE VALLEY RD. K301, Pullman, 99163, and **Hongbo Dong** and **Haijun Li**. *Sparse model selection for high-dimensional vine copulas via penalized optimization.*

Vine Copula is a flexible graphical model to capture the dependence structure for high-dimensional continuously-valued random variables. It has been shown to be useful in many fields such as finance and risk management, especially when the usual Gaussian assumptions do not hold. We propose a method for model selection of high-dimensional vine copulas with certain structures, such as the sparsity (i.e., promote the number of independence copulas used). Motivated by the literature in sparse regression, the zero-norm penalty function is used in our context. We show that combined with the stepwise estimation method, optimization problems with the zero-norm penalty functions can be solved with little additional costs. We report comparisons between our proposed method and the state-of-the-art VineCopula package on simulated data. (Received February 28, 2017)