

Testing Against Independence in Bivariate Tails

Abstract

We start with bivariate standard Gaussian distributions which can be characterized by their correlation coefficients. If the correlation coefficient is equal to zero then stochastic independence holds and, otherwise, we have dependence. According to a classical result of Sibuja and other authors, the componentwise taken maxima are asymptotically independent, if the correlation coefficient is strictly between -1 and 1. A generalization of this result leads to the notion of tail independence/dependence. We give an outline of different measures of tail independence/dependence and their relation to each other. A test against tail independence is developed which is based on the radial component.