JOSÉ MARÍA GONZÁLEZ-BARRIOS, Universidad Nacional Autonoma de Mexico, IIMAS, Circuito Escolar s/n, Mexico D.F. 04510, Mexico

Associativity and Symmetry of Copulas

In this talk we will introduce two new statistics A_π^n and T_n defined for random samples of size n, of a pair of continuous random variable (X, Y) with copula C. The statistics measure the associativity and symmetry of the samples respectively, that is, if the copula satisfies

$$C\big(x, C(y, z)\big) = C\big(C(x, y), z\big) \quad \text{for every } x, y, z \in [0, 1]$$

and

$$C(x, y) = C(y, x) \quad \text{for every } x, y \in [0, 1].$$

These conditions are necessary for the copula C to belong to the Archimedean family.

We will study the properties of the new statistics, and we will include some applications.