

Association schemes

Vedran Krčadinac

Department of Mathematics Faculty of Science University of Zagreb, Zagreb

The concept of association schemes was defined by statisticians in the 1950s. Research of permutation groups and related algebras in the 1970s lead to the equivalent concept of "coherent configurations". Independently and at about the same time, Soviet mathematicians studied "cellular algebras", another equivalent concept motivated by problems from graph theory. Association schemes became one of the central concepts of algebraic combinatorics with the publication of Phillippe Delsarte's thesis in 1973, in which he connected them with coding theory and design theory.

In this talk I will give a brief overview of the theory of association schemes. The motivation and the main examples will be association schemes coming from strongly regular graphs and distance regular graphs.