Equivalence of categories: an essential step to the representations of Artin algebras

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> CIMPA School Medellín Posters Session Medellín, Colombia, June 18-27, 2018

Abstract

Category theory was introduced by Samuel Eilenberg and Saunders Mac Lane in 1945, trying to develop tools to facilitate the study of homology theory; over the years the theory has proved to be one of the most useful tools that mathematicians have to analyze certain objects. The notions of equivalence between categories, as well as the fundamental theorem connecting equivalence with the concepts of faithfulness, fullness and density will be presented.