

THEMATIC SESSION: Logic

When 'Almost Always' Implies 'Always': Recent Insights into Compactness Phenomena in Set Theory

Alejandro Poveda (Harvard University)

In this presentation, we shall be preoccupied with compactness phenomena in set theory. Compactness is the phenomenon by which the local properties of a mathematical structure determine its global behavior. This phenomenon is intrinsic to the very architecture of the mathematical universe and manifests to us in a cornucopia of forms. Over the past fifty years, the study of compactness phenomena has been a cornerstone of research in set theory. This talk will present recent discoveries regarding compactness principles, spanning classical themes like the tree property and stationary reflection, while also forging novel connections with other topics, such as Woodin's HOD Conjecture.