Speaker: Ludovic Patey

Title: The strength of the thin set theorems

Abstract: Ramsey's theorem for n-tuples and k-colors asserts for every k-coloring of $[N]^n$ the existence of an infinite monochromatic subset $H$. Whenever $n \geq 3$, this statement is known to be equivalent to the Arithmetical Comprehension Axiom in reverse mathematics. The community quickly focused on the case $n = 2$.

However, Wang proved that the statement obtained by authorizing more colors in the output $H$ was strictly weaker than ACA in reverse mathematics. The thin set theorem for n-tuples and k-colors asserts for every k-coloring of $[N]^n$, the existence of an infinite subset $H$ avoiding at least one color. In this talk, we will present the recent development about the strength of the thin set theorem.