

## Hector Pasten (PUC Chile)

# *Arithmetic progressions in elliptic curves and ranks*



Jeudi 28  
Février 2019  
17h00-18h00  
Université Paris Diderot,  
Bâtiment Sophie Germain,  
Amphi Turing (sous-sol)

It is a classical problem to try to find long sequences of rational points in elliptic curves such that their  $x$ -coordinates (for a fixed Weierstrass equation) form an arithmetic progression. Although the problem originates in recreational mathematics, it was later realized that the existence of such sequences seems to be related to elliptic curves of large rank, and a precise conjecture was formulated and investigated by Bremner, Silverman, and Tzanakis in the case of quadratic twists families. In this talk I will outline a proof of this conjecture relating long arithmetic progressions and ranks of elliptic curves, and I will discuss some applications. This is joint work with Natalia Garcia-Fritz.