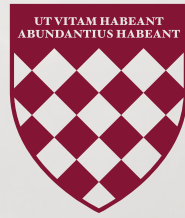




AMERICAN
UNIVERSITY OF BEIRUT

CENTER FOR ADVANCED
MATHEMATICAL SCIENCES



AMERICAN
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FACULTY OF ARTS & SCIENCES
Department of Mathematics

FROM DIOPHANTUS TO BITCOIN WHY ARE ELLIPTIC CURVES EVERYWHERE?

Elliptic curves are ubiquitous in number theory, algebraic geometry, complex analysis, cryptography, physics, and beyond. They were present in Diophantus' *Arithmetica* (3rd century AD) and, nowadays, they are more relevant than ever as a key ingredient in the algorithms that, for instance, secure Bitcoin transactions or encrypt WhatsApp messages. In this talk, we will introduce elliptic curves, explain their central role in mathematics, and discuss related open problems and applications.

Addition and Doubling of Points on an Elliptic Curve.

TUESDAY, NOVEMBER 1, 2022

6:00 PM (BEIRUT TIME) - ONLINE



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University of Connecticut, USA

ÁLVARO LOZANO-ROBLEDO is a professor of mathematics at the University of Connecticut. He received his PhD from Boston University in 2004. After temporary positions at Colby College and Cornell University, Álvaro has worked at UConn since 2008. His research interests are in the area of arithmetic geometry (the crossroads of number theory and algebraic geometry). He has published two books, "Elliptic Curves, Modular Forms, and their L-Functions", and "Number Theory and Geometry." Álvaro's blog, *A Field Guide to Mathematics*, contains other short stories and also other pieces of interest to mathematicians.