DE PRIMA LECTURE
THURSDAY, DECEMBER 1, 2022, 4:30-5:30 PM
310 LINDE HALL

Diophantine Equations in Two Variables and the Arithmetic Shapes of Solutions

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Take an equation like

$$y^3 = x^6 + 23x^5 + 37x^4 + 691x^3 - 631204x^2 + 5169373941$$

It has the solution (1, 1729) as I'm sure you saw right away. Are there any other solutions in rational numbers?

The study of integral or rational solutions to polynomial equations, sometimes known as the theory of Diophantine equations, is among the oldest pursuits in mathematics. This lecture will give an idiosyncratic survey of the remarkable advances made in the 20th and 21st century for the special case of equations of two variables. The emphasis will be on the techniques of arithmetic topology, where we combine the study of numbers with the study of shapes, often in intricate and surprising ways.

Getting Here: Parking is available in Lot 3 (underground parking #126 on campus map) on California Blvd. between Wilson and Arden (near the tennis courts). Linde Hall is located directly across the street.
Questions? Please email mathinfor@caltech.edu or call 626-395-4335