Online Number Theory Seminar

25 March 2022. – 17:00-17:50

Gary Walsh: Integers as Sums of Three Cubes

In this lecture we discuss a variety of topics on the diophantine equation $x^3 + y^3 + z^3 = k$, from a historical look at the computational attempts to solve the case $k = 3$, to recent extraordinary discoveries. We also develop an algorithmic approach that appears to have been overlooked, and shows how solutions with many decimal digits can often arise naturally from the existence of certain algebraic numbers of remarkably small height.