
TIMOTHY CALEY, University of Waterloo

The Prouhet-Tarry-Escott Problem and Applications

The Prouhet-Tarry-Escott (PTE) problem is a classical number theoretic problem which asks for integer solutions to sums of equal powers. Solutions to the PTE problem give improved bounds for the "Easier" Waring problem, but they are difficult to find using conventional methods. We will describe how solutions can be found computationally and by connecting the problem to finding rational points on elliptic curves. We will also discuss some other applications of the problem. There will also be a statement of open questions relating to the PTE problem.