

## Citation for Samir Siksek (Shephard Prize)

### Short citation

Professor Samir Siksek of the University of Warwick is awarded the LMS Shephard Prize for numerous seductively simple and concrete diophantine results whose proofs involve a virtuoso display of the most advanced mathematical ideas.

### Long citation

Professor Samir Siksek of the

bounds are however so astronomical as to make complete resolution appear entirely prohibitive.

- Galois representations associated to elliptic curves and modular forms, and in particular the great works of Serre, Ribet, Wiles and Taylor, which led to Wiles' proof of Fermat's Last Theorem.

In the language of the two papers, these are called the 'classical approach' and the 'modular approach' to Diophantine equations.

The papers provide theoretical improvements to Baker's bounds in the critical case of linear forms in three logarithms. They then show how the information provided by the modular approach leads to vast improvements in the bounds: a reduction from doubly exponential to merely singly exponential.

They finally demonstrate how the information from the modular approach can be pieced together to prove that there are indeed no missing solutions.

The papers have been remarkably influential, and many other Diophantine problems have since been successfully attacked by similar combinations of techniques.