Whitehead Prize: citation for Evgeny Shinder

Short citation:

Professor Evgeny Shinder of the University of Sheffield is awarded a Whitehead Prize for his contributions to algebraic geometry, in particular to rationality problems and to derived categories. Shinder has made groundbreaking contributions to classical problems within rational and stably rational varieties, has fundamentally changed our understanding of the classically-defined Cremona groups by showing that they are not generated by regularizable elements, and has made profound contributions to categorical approaches to algebraic geometry through semi-orthogonal decompositions and K-theory, and through the introduction of categorical absorption of singularities.

Long citation:

Professor Evgeny Shinder of the University of Sheffield is awarded a Whitehead Prize for his contributions to algebraic geometry, in particular to rationality problems and to derived categories.

Using techniques such as the Grothendieck ring of varieties, Shinder has made groundbreaking contributions to classical problems within rational and stably rational varieties. He has proved remarkable and fundamental properties of such varieties, and furthermore has used this to fundamentally change our understanding of the classically-defined Cremona groups, by showing that they are not generated by regularizable elements.

On a parallel track, Shinder has made multiple and profound contributions to categorical approaches to algebraic geometry.

The key notion of categorical absorption of singularities, introduced in groundbreaking joint work by Kuznetsov and Shinder, has been used to give very highly non-trivial information on pairs of categories associated to Fano and del Pezzo 3-folds, in the process correcting and proving the Fano threefold conjecture of Kuznetsov.

In addition, Shinder is a leader in developing the understanding of singular varieties through their derived categories, semi-orthogonal decompositions, and K-theory. In various works, Shinder has pioneered the use of semi-orthogonal decompositions to extract geometric information in the presence of singularities, primarily in dimension two and three, amongst other things using negative K-theory and its relationship with the defect as an obstruction to obtaining such decompositions.

Overall, the work of Shinder and coauthors has solved classical problems whilst also pursuing a very new and novel research programme in both rationality and derived categories. This combination of the classical and the novel, together with the new problems and techniques that have opened out for many other researchers due to Shinder's work, is very worthy of a Whitehead Prize.