

Citation for the 2019 RAS Fowler Award (A): Dr Baojiu Li

The 2019 Fowler Award (A) is awarded to Dr Baojiu Li.

Dr Baojiu Li, Associate Professor at Durham University, has pioneered the development and application of computer simulations to model the formation of cosmic structures in modified gravity theories. Dr Li developed the first N-body simulation code that was able to solve the highly nonlinear equations describing the gravitational potential in such models whilst running in parallel on supercomputers.

This breakthrough opened up a new vista in the subject, allowing the first quantitative investigations of the cosmic large-scale structure in modified gravity models. For the first time, the study of alternatives to standard gravity was put on a similar footing to the standard cosmological model.

Dr Li and his collaborators have exploited this powerful computational resource to study the nonlinear stages of structure formation in a number of promising alternatives to general relativity. His work has resulted in the tightest constraints on such models and has the potential to lead to a major step forward in our understanding of gravity on large scales.

For these reasons, Dr Baojiu Li is awarded the Fowler Award (A).