

## **Fowler Award (G) - Dr Richard Morton**

### **Full citation**

Dr Richard Morton has made a number of outstanding contributions to the field of solar physics, in particular within the subdisciplines of MagnetoHydroDynamic (MHD) wave theory and magneto-seismology of solar observations. Richard has successfully demonstrated the potential for the unification of MHD wave theory with actual observations of solar MHD waves (“magneto-seismology”).

He was first to demonstrate the importance of including time-dependent equilibrium plasma into the governing MHD wave equations. He led a team which discovered that the necessary fundamental conditions exist for Alfvénic waves in coronal holes to heat plasma via wave turbulence and provided confirmation of a long-held belief that Alfvén waves found in the solar wind are of solar origin.

His work also provided the first evidence that the Sun’s internal acoustic modes contribute to the basal flux of Alfvénic waves, delivering a spatially-ubiquitous input to the coronal energy balance. Richard played a key role in a consortium of UK universities and industrial partners, who secured a £3.5 million STFC grant enabling the consortium to make crucial contributions to the DK Inouye Solar Telescope (the largest solar telescope ever built and the vanguard instrument in ground-based solar physics).

For these achievements he receives the Fowler (G) award.

### **Short citation**

Dr Richard Morton is awarded the Fowler Award for making outstanding contributions to the field of solar physics, in particular for demonstrating the potential for the unification of the theory and observations of the Magneto Hydro Dynamic (MHD) waves.