National Award for Atmospheric Sciences & Technology

Dr. K. Krishnamoorthy

The scientific acumen of Dr. K. Krishnamoorthy, along with his exceptional expertise in instrumentation, his vision, leadership and excellence in teamwork have led to him being almost singularly responsible for the evolution of aerosol-climate research in India; opening-up of this once-dormant field and propelling it to be one of the most vibrant disciplines in atmospheric science in the country today. This outstanding accomplishment was achieved through his intuitive and all round excellence, including indigenously developing the prime scientific instrument (Multi-Wavelength Solar Radiometer, for which he received the patent rights), establishing, through ISRO, the largest aerosol network (ARFINET) in the country that continues to provide the longest, quality-checked aerosol data in India, conceiving and leading from the front the biggest and 'first-of-their-kinds' field experiments with large national teams, and enriching the discipline with several classic and 'discovery class' papers that unravelled the complex and region-specific interplay between natural and anthropogenic aerosols with Indian weather and monsoon system. His vision and all-round leadership qualities stood the test of time, and have become benchmark for collective team excellence in science.

His meticulous observations of natural and anthropogenic aerosols in the atmosphere over the Indian region and estimation of their impacts on critical components of the climate like the monsoon is not only of great scientific interest but also of considerable applied importance. By ingeniously synthesizing his quality-controlled aerosol data with models, he has elucidated radiative impacts and CCN activity of aerosols over the most heterogeneous and complex terrain in Asia and Africa. In the era when the world over, satellite derived aerosol information over India is being used discriminatorily, without proper validation, to project particularly adverse impacts of anthropogenic aerosols on the Indian monsoon, the importance of elucidating the observed aerosol characteristics for accurate impact assessment cannot be overemphasized.

Dr. Moorthy's outstanding research has led to over 225 publications in international journals, with a cumulative citation index of 5100 and an h-index of 40, with about 10 of his papers cited more than 100 times each. About 16 of his publications have been cited in the 5th assessment report of the IPCC (2013), the highest ever from the Indian side, on aerosols. He is an elected fellow of all the three Science Academies of India. He has made major contributions to several programmes of MoES, and is the Chair of the INSA discipline

National Committee on Future Earth. Dr. Moorthy's expertise and leadership has been instrumental in formulating and implementing several joint international scientific experiments in India under the joint Indo-US and Indo-UK programmes. He contributed immensely to human resource development. The scientific manpower, resulted from his mentoring, continues to enrich the discipline and helps to maintain its global signature. The data generated through his efforts have found societal applications forming inputs for national solar energy mission, and for policy matters.

In recognition to his outstanding research contributions in the field of Atmospheric Sciences and Technology the Ministry of Earth Sciences honours Prof. K. Krishnamoorthy with the "National Award in the field of Atmospheric Sciences and Technology" for the year 2017.