
National Award for Woman Scientist

Prof. Kusala Rajendran



Prof. Kusala Rajendran's career in earth sciences spans over 3 decades and is mostly devoted to understanding earthquake processes. She has completed her Master of Technology in the field of Applied Geophysics from the Indian Institute of Technology, Roorkee in 1979. She graduated from University of South Carolina, USA with a Doctor of Philosophy in Seismology in the year 1992. Owing to the growing demand for well qualified seismologists at the time, she returned to India after completing her PhD. She has worked extensively in Gujarat, Maharashtra and the Himalayas and believes that India has a great potential as an earth science destination, considering that the Himalayas constitute of one of the most active plate collision boundary in the world.

Her work mainly deals with reservoir-triggered seismicity and hers was the first work on 3-D seismic tomography of a siesmogenic reservoir. Very early in her career she started collaborations with international teams, and one such effort has resulted in the World Stress Map, a project by the International Lithosphere Program, a widely quoted paper published in Nature. She has worked extensively on intra continental earthquakes, focusing on seismotectonics, coseismic deformation and recurrence of earthquakes. While at CESS she spearheaded studies on earthquakes in the peninsular shield and also established a Broadband seismic station at Peechi in 1999, which continues to contribute to the national network. Her work has contributed to the better understanding of the earthquake sources in Kerala including that in the vicinity of the Idukki Reservoir.

Prof. Rajendran helped in establishing the Centre for Earth Sciences, with its unique interdisciplinary character at IISc and she has been a professor at this centre since 2007. She develops her own teaching philosophy and methodology as there are hardly any prescribed textbooks in Geophysics for undergraduates. She and her team have worked by using both field and instrumental data to explain the type of deformation associated with great plate boundary earthquakes. Their analyses of pre and post mechanisms have elucidated how the plate boundary forces manifest as earthquake source mechanisms and how some of them would generate tsunamis, while others would not. Through extensive field work, she and her team have demonstrated how different coastal environments were best suited for preservation of tsunami deposits. Work carried out by her after the Nepal, 2015 earthquake has led to the identification of a potential surface rupture a rarity for the Himalayan earthquakes.

She has more than 70 publications with a citation of 2047; h-index of 22 and i10 index of 42. She has won Tabor Award in 1992, University of South Carolina and Krishnan Gold Medal in 1993 from Indian Geophysical Union. She is also a life member of IGU as well as AGU.

In recognition to her outstanding contributions in the field of Geoscience and Technology, Ministry of Earth Sciences (MoES) honours Prof. Kusala Rajendran with the “National Award for Woman Scientist” for the year 2018.