

SPOTLIGHT | SSB AWARDEES

{ **ROXY MATHEW KOLL** } EARTH SCIENCE; INDIAN INSTITUTE OF TROPICAL METEOROLOGY

Studying the mechanisms involved in climate change



Roxy Mathew Koll, winner of this year's Vigyan Yuva Shanti Swarup Bhatnagar award for Earth Science, is a climate scientist with the Indian Institute of Tropical Meteorology. Koll, lead author of the Intergovernmental Panel on Climate Change (IPCC) reports in 2019 and 2021, talks about his work in studying the mechanisms involved in causing climate change, including his focus area of marine heatwaves.

What I do

My work is focused on climate

change over the Indo-Pacific region, particularly the Indian subcontinent. I have been working on all kinds of extreme weather events over India or the larger tropical Indian subcontinent region.

How I do it

I use long-term data as well as climate models to understand the mechanisms that play out resulting in climate change and variability in terms of extreme events, including those from the ocean point of view such as changes in sea level and marine

heatwaves.

Studying marine heatwaves has been among the recent important work I have done. Marine heatwaves are periods of extremely high temperatures in the ocean that cause corals to bleach, disrupt fisheries, and intensify storms and extreme weather. My work provides insights not only on how the climate has changed in the past and is changing in the present, but also on how it is going to change in the future, so that we can be prepared in terms of policies for climate adaptation.