RAMAIAH UNIVERSITY OF APPLIED SCIENCES

Report on

Distinguished Lecture Series (Online) by Professor Harindra J. Fernando

"Monsoon Intraseasonal Oscillations in Equatorial Atmosphere and Oceans"

Organized by: Directorate of Research and ICPM

Ramaiah University of Applied Sciences,
Date: 23 November 2020
Venue: Online

Report on Distinguished Lecture Series (Online) by Professor Harindra Joe Fernando

"Monsoon Intraseasonal Oscillations in Equatorial Atmosphere and Oceans"

Summary:

As a part of continuation of the Distinguished Lecture Series, an online Distinguished Lecture has been delivered by Professor Harindra Joe Fernando on the topic entitled **"*Monsoon Intraseasonal Oscillations in Equatorial Atmosphere and Oceans*"** at Ramaiah University of Applied Sciences (RUAS).

The Distinguished Lecture has engaged Participants across the country along with RUAS Internal Faculty Members and Ph.D. Scholars.

Event Description:

Professor Harindra J. Fernando, Wayne and Diana Murdy Endowed Professor, Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, USA, has presented online Distinguished Lecture on the topic entitled "Monsoon Intraseasonal Oscillations in Equatorial Atmosphere and Oceans" at RUAS on 23 November 2020.

The Distinguished Lecture Series has been initiated at RUAS in 2018 and has become since then a place for renowned academics, scholars, qualified experts and scientists to share their knowledge and debate on topics of current relevance. Distinguished Lectures Series delivered by outstanding scientists and academicians aims to:

- Create a scientifically advanced and challenging context for academic work and development of knowledge on topics of interest and importance to global scientific community
- Serve as one of the means to stay aware of the most recent scientific and technological developments,
- Provide benefits to professional peer networking to all Participants.

(Organizers)

Dr. Govind R. Kadambi, Acting Vice Chancellor, RUAS

Dr. Sharath Kumar, Director – Research, RUAS

Ms. Lyubov Kulikovich, Deputy-Director, ICPM

Objectives:

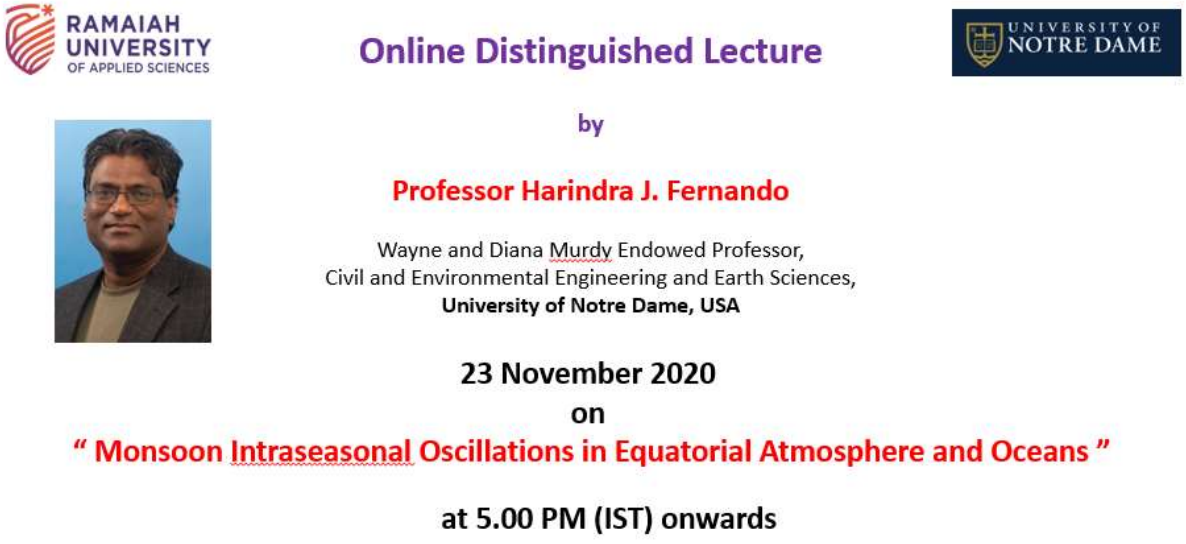
1. To observe and model the intriguing phenomena and interactions across the scales that provide building blocks of weather variability in equatorial oceans and atmosphere.

Budget: Event is Free of Cost for All Participants

Program and Speakers

Sl. No.	Resource Person	Title of the Distinguished Lecture	Date and Time
1	**Professor Harindra J. Fernando** Wayne and Diana Murdy Endowed Professor, Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, USA	***Monsoon Intraseasonal Oscillations in Equatorial Atmosphere and Oceans***	23 November 2020 (05.00 pm IST)

Summary of the Event



Professor Harindra J. Fernando, Wayne and Diana Murdy Endowed Professor, Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, USA, has presented online Distinguished Lecture on the topic entitled "Monsoon Intraseasonal Oscillations in Equatorial Atmosphere and Oceans" at RUAS on 23 November 2020.

Distinguished Guest Lecture Series (Online) has been organized and moderated by RUAS. RUAS Key Participants attended the event were: Dr. Govind R. Kadambi, Acting Vice Chancellor, Dr. Sharath Kumar, Director – Research, and Ms. Lyubov Kulikovich, Deputy-Director, ICPM. Speaker was **Professor Harindra Joe Fernando**. The event has been made available free of cost to all Participants.

- **Programme:**

  Distinguished Guest Lecture Series began with the introduction of the Speaker by Dr. Govind R. Kadambi, Acting Vice Chancellor, RUAS. Professor Harindra Joe Fernando went ahead with his talk. Afterwards, there was a Q&A session, and the event has been concluded.

  Professor Harindra Joe Fernando presented on the hydrology of Indian Summer Monsoons is sensitively determined by the active and break phases of rainfall. Such variability is related to a bevy of intraseasonal oscillations (ISO) present in the tropical atmosphere and oceans with time scales ranging from about 30 to 60 days. Some examples of ISO are the ubiquitous equatorial planetary waves and the Madden Julian Oscillation that travel along an equatorial wave guide. Another important but meagerly understood ISO is the Monsoon Intraseasonal Oscillations (MISO) that propagate from the equatorial Indian Ocean toward the Bay of Bengal and then split into westward and northward branches. MISO events are directly related to the rainfall variability as well as a source of ISO with global reach that trigger larger scale phenomena, for example, El Niño. A comprehensive research program sponsored by the US Office of Naval Research (2012-2022) is afoot to peer into both oceanic and atmospheric ISO in the northern Indian Ocean. Under the umbrella of this initiative are the ASIRI, ASIRI-RAWI, NasCAR and MISO-BOB initiatives. Hypotheses are advanced on the dynamics of MISO propagation as well as convective-coupling of atmospheric and oceanic ISO across the air-sea interface. Two-month long ocean cruises were conducted in 2013, 2014, and 2015 concentrating on oceanic ISOs, complemented by deep ocean moorings and land based observations covering four southeast Asian countries. A Pilot experiment in the summer 2018 was exclusively focused on MISO events, and included observations aboard a research vessel and an instrumented aircraft. These in situ observations were complemented by satellite and reanalysis products to obtain a holistic picture of MISO dynamics. In unison, the research programs sheds light on the dynamics of MISO as well as processes that undergird convective coupling of MISO with the ocean below. The ocean was found to exert great control on MISO via complex multiscale air-sea interaction processes. Observations and modeling conducted during these programs will be outlined in this presentation, paying attention to intriguing phenomena and interactions across the scales that provide building blocks of weather variability in equatorial oceans and atmosphere.

  Therefore, the objective to observe and model the intriguing phenomena and interactions across the scales that provide building blocks of weather variability in equatorial oceans and atmosphere has been successfully achieved. The Distinguished Lecture has engaged around 20 participants in specialized field across country along with RUAS Internal Faculty Members and Ph.D. Scholars.

Conclusion and Outcomes

- **Programme outputs:**

  During the Distinguished Guest Lecture Series, the objective to observe and model the intriguing phenomena and interactions across the scales that provide building blocks of weather variability in equatorial oceans and atmosphere has been achieved successfully. The Distinguished Lectures have engaged around 20 Participants in specialized field across the country along with RUAS Internal Faculty Members and Ph.D. Scholars.

Annexure

Link to the Recording:
https://web.microsoftstream.com/video/591f36ff-bdff-4194-864e-cfd4f67774a9