



Maldivian Meteorological Service

S-POL WEATHER RESEARCH RADAR



DYNAMO :: DYNAMICS OF THE MADDEN-JULIAN OSCILLATION

The DYNAMO field research project is using this radar to study a tropical weather cycle, to better understand its role in regional monsoon rains and global ocean-atmosphere interactions. The Maldivian Meteorological Service is a partner in this international science project.



The radar will remain on this site for several months, along with other research equipment on Addu Atoll. You are welcome to knock on the office door and ask for a look around. For more complete details of the radar, and the DYNAMO field campaign, please visit www.eol.ucar.edu/dynamo.

DYNAMO is being conducted in collaboration with other agencies and field projects including Atmospheric Radiation Measurement MJO Investigation Experiment (AMIE) and the Cooperative Indian Ocean Experiment on Intraseasonal Variability in the Year 2011(CINDY2011). DYNAMO and AMIE sites are also found at Gan International Airport, Hithadhoo City, and the Male International Airport.

WHAT IS THE MADDEN-JULIAN OSCILLATION?

The Madden-Julian Oscillation (MJO) is a 60 to 90 day tropical weather cycle that alternates between large, strong rain storms and relatively quiet periods. The MJO is an important factor for local weather in the tropics, affecting the regional monsoon rains and has impact on the global weather and climate. Improved understanding of this important event will help weather prediction in the tropics, as well as global weather and climate predictions.

WHY THE MALDIVE ISLANDS?

The Maldivian Islands provide a unique location for this type of observational research to be conducted because it is located in a key formation region of the MJO and provides an excellent location for land-based measurements in the Indian Ocean.



WHAT IS THE S-POL RADAR?

The S-Pol radar is sited here temporarily in support of a scientific research project led by a group of international university researchers and government organizations. This weather research radar is used to monitor clouds and rainfall, as well as to measure intensity and types of precipitation and has direct future applications to weather forecasts and climate modeling.

HOW DOES THE RADAR WORK?

The radar sends out a wave, or signal, and measures the waves that are reflected back from cloud and precipitation particles. The collected data are studied and made into images that show the details of clouds, allowing conclusions to be made about the strength of the storm, amount of rain, and type of precipitation (for example: snow or rain). The radar is also a Doppler system, allowing measurements of the wind.

WHO ARE WE?

A group of scientist, engineers and technicians from the National Center for Atmospheric Research and other international participants have come to the Maldives to set up and operate this radar. We have chosen the period from October 2011-January 2012 to study the formation of the MJO. Our measurements are coordinated with ships and aircraft also operating in the Indian Ocean during this time.

