

# Global SST Modes and Sea Ice Trends in CMIP5 Models

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**POSITION TITLE:** RESEARCH ASSISTANT /CLIMATE DATA ANALYST

**RESEARCH PROJECT TITLE:** GLOBAL SST MODES AND SEA ICE TRENDS IN CMIP5 MODELS

**FACULTY NAME & TITLE:** PROFESSOR DAVID M. HOLLAND, CENTER FOR GLOBAL SEA LEVEL CHANGE

## RESEARCH PROJECT DESCRIPTION

Observations over the last 30 years have shown that the sea ice extent in the Southern Ocean has slightly increased. The trend results from regional cancellations, more ice in the Western Ross sea, and less ice in the Amundsen -Bellingshausen seas. Results from general circulation models involved in the 5<sup>th</sup> Coupled Model Intercomparison Project (CMIP5), show that climate models consistently produce a negative trend over the same period when forced with all known natural and anthropogenic forcings. We aim to investigate the reasons behind this discrepancy by focusing on the representation of global Sea Surface Temperature modes in the models. We aim here to investigate the relationship between the ability of the CMIP5 models to simulate observed global modes of sea surface temperature variability and their ability to reproduce the observed regional Antarctic sea ice trends. The pre-industrial control simulations will be used to assess the internal variability of the models.

## RESPONSIBILITIES OF THE POSITION

- Work in collaboration and under the supervision of Dr. Amna Jrrar
- Retrieve the relevant CMIP5 models datasets
- Analyze the data as per the project description
- Write a detailed description of analysis and results
- Co-write a research article detailing the results
- Present the work in local and external meeting and conferences

## ESSENTIAL QUALIFICATIONS:

B.SC. in Mathematics, Physics, Meteorology or Computer Science 1<sup>st</sup> or upper second class degree  
Proficiency in English, Reading, writing, Listening and Speaking, equivalent to IELTS 6.0

## PREFERRED EXPERIENCE / SKILLS:

MA in Statistics/ Computer Science  
Experience in working with large Datasets  
Programming Skills, Matlab, R statistical Package

## APPLICANTS TO PROVIDE:

1. Statement of interest in the position
2. Transcript of degree(s)
3. CV
4. Two letters of recommendation