



MINISTRY OF PUBLIC WORKS, TRANSPORT AND METEOROLOGICAL SERVICES

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Historical Meteorological Data Request Form

A. Client Information

Name: ASHNEEL CHANDRA

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B. Purpose of the Request

Provide details of the purpose for this request (attach additional pages if required). If this request is for academic research, then attach a detailed research proposal. Please note that approval of data release is subject to project relevancy.

We are working on evaluating the performance of global storm permitting models and are interested in comparing data from these models with station rainfall data. It would be nice to include station data from Fiji to see how precipitation simulated by these models compare with observed precipitation. Especially as these models may be useful for smaller islands as they are resolved in these high resolution global simulations.

(Brief research proposal attached)

Send your completed form or questions to: climate@met.gov.fj or fmscustomer@met.gov.fj

C. Details of the data

Provide details of the data which is required. Be as specific as possible about meteorological variable/s, time resolution, location/s and data period.

Location: Suva, Lautoka, Rakiraki, Savusavu, Labasa (stations nearest to these towns if available). Please also provide the corresponding locations (latitude, longitude) of the stations so we can compare the stations to the nearest model grid.

Meteorological Variable (e.g. rainfall, temperature, pressure, sunshine, etc) :

Rainfall

Time Resolution (10mins, hourly, daily, monthly or annual):

Hourly (if available) or daily accumulations from stations. We are particularly interested in how hourly rainfall from the models compare with station hourly rainfall. However, if hourly data is not available, we can use the daily accumulations.

Data Period: 1990 to 2022

Mode of delivery:

☐ Post



Fax



Email



Collect

D. Declaration

I hereby undertake neither to transfer nor to sell for whatever reason whatsoever the data supplied by Fiji Meteorological Service.

Moreover, if this study is published, I undertake to:

- Acknowledge clearly " FIJI METEOROLOGICAL SERVICE" as having supplied the data in question; and
- Supply a copy of the study, once this is finished, to the Fiji Meteorological Service.

Signature: Ashneel Chandra

Date: 09/04/2025

Stamp

E. For Official Use Only**Technical Vetting:**

Signature: _____ Date: _____

Divisional Manager's Approval/Recommendation/s:☐ Approved ☐ Not Approved

Signature: _____ Date: _____

Director of Meteorology's Approval:☐ Approved ☐ Not Approved

Signature: _____ Date: _____

Send your completed form or questions to: climate@met.gov.fj or fmscustomer@met.gov.fj

Project Title: Model intercomparison for extremes precipitation

Project Details

This project intercompares multiple model output including Narclim and the global convection permitting models, and others that will be available

Simulated precipitation will be compared against station data at different temporal scales (hourly, daily, monthly) and regions of interest (e.g., Sydney, Suva (Fiji))

The teams will perform analysis around seasonal and diurnal cycles of extreme precipitation.

Project Lead: Ashneel Chandra and Leena Khadke

Project Description

Background:

The project aims to explore how convection permitting and non-convection permitting models compare with observed extreme precipitation. The participants will use a range of metrics to perform this evaluation.

Primary research question:

How well do convection-permitting models represent extreme precipitation compared to non-convection-permitting models?

Primary output:

A comparison of different model simulations to observed precipitation

Secondary outputs:

Figures and scripts

Methodology

Statistical analysis including quantile mapping, pdfs applied to seasonal cycles, daily and monthly precipitation timeseries from stations and models

Datasets:

Precipitation from model simulations

Station data (Sydney archive and Fiji archive) will be provided by the leaders

Potentially BARRA-R2 (available on Gadi)

Methods:

It would be very helpful if the CMS team could provide examples of Jupyter notebooks that show how we can regrid from HEALPix into regular grid or data loading and common post-processing