A COURSE ON

COMPREHENSIVE COURSE ON PHOTOVOLTAIC (PV) DATA ANALYSIS WITH GNUPLOT

Duration: 2 days
Trainer: Dr Ahmad Maliki Omar

Synopsis

This intensive short course aims to equip participants with the essential skills and knowledge required for in-depth analysis of Photovoltaic (PV) data using Gnuplot. Over two days, participants will delve into the foundations of PV systems, various types of PV data, and the intricacies of the Gnuplot software. The course is meticulously structured to cater to both beginners and those with some prior knowledge of data concepts.

Course contents

Day 1		**Introduction to PV system and Gnuplot Software**
	Morning	Understanding PV Data and Gnuplot Software
		Foundations of PV Systems and Data • Introduction to Photovoltaics (PV) • Overview of solar energy and PV technology. • Components of a PV system and their functions. • Malaysian Standards: MS1837 and MS2692 Types of PV Data and Data Collection: • Overview of different types of PV data (irradiance, temperature, voltage, current, power and energy). • Techniques for effective data collection and storage.
	Lunch Break	
	Afternoon Session	Gnuplot Basics
		Getting Started with Gnuplot: • Installation and basic configuration. • Understanding Gnuplot syntax and structure. Plotting Fundamentals: • Creating basic plots: line graphs, scatter plots, and histograms. • Customizing plots with titles, labels, and legends.
Day 2		**Advanced PV Data Analysis Techniques with Gnuplot**
	Morning Session	Time-Series and Comparative Analysis
		Time-Series Analysis in PV Systems: • Handling time-dependent PV data. • Techniques for visualizing and interpreting time-series trends. Comparative Analysis and Multi-Variable Plots: • Comparative analysis of multiple datasets. • Creating multi-variable plots for comprehensive data exploration.
	Lunch Break	
	Afternoon Session	Gnuplot Practical Applications

		Applying Gnuplot to real-world PV datasets.
		• Case studies demonstrating the application of Gnuplot in solving practical PV data analysis problems. • Engage in practical exercises using participants' datasets. • Troubleshoot common issues and challenges in PV data analysis.
	Q&A and Hands-On Workshop	Participants can ask questions related to the course content.

Requirements:

1. All participants must bring their own computers for use during the course.
2. This course is designed for participants with a basic understanding of data concepts. Practical exercises will involve hands-on application of Gnuplot to enhance participants' analytical skills.
3. Gnuplot is a free software and can be downloaded from the Gnuplot website.
4. All participants are encouraged to bring their own dataset.

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CONTACT

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