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Lessons on Data Analysis from CERN

Lecture 2

Introduction to Data Analysis

What is data analysis?

Data analysis is a process of inspecting, cleaning, transforming, and modeling data **with the goal of** discovering useful information, informing conclusions, and supporting decision-making.

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Key Ideas

- Any **experiment** (study or analysis) in any field of science **should have** a **data analysis** component

- This is stage of **interpretation of the results** of the experiment.

- Normally, what is **published** is the **results of data analysis**.

Course Overview*

- **Lecture 1: Orientation / Course Overview / Intro to CERN**

- **Lecture 2: Intro to data analysis workflow**

- **Lecture 3: Overview of Computing Principles and Hardware**

- **Lecture 4: Different OS / CLI vs GUI / Bash**

- **Lecture 5: Python**

- **Lecture 6: IDEs / GitHub Clasroom**

- **Lecture 7: Quiz**

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- Lecture 8: Best practices in Coding

- Lecture 9: Best practices in Data Analysis

- Lecture 10: Effective Problem Solving Techniques

- Lecture 11: Basic statistical Analysis with Python

- Lecture 12: Analysis Preservation and Reproducibility

- Lecture 13: Quiz

- Project Preparation

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