

# Seminario

**Friday, February 18th, 2022 – 10:00 am (CET)**

**AULA C**

**Physics and Astronomy Dpt.**

***Zoom Link:***

<https://infn-it.zoom.us/j/8840099750>

## **Overview of future research directions towards sustainable and energy efficient Cloud and High-Performance Computing**

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### *Abstract*

Cloud computing and HPC paradigms offer on-demand services over the Internet allowing researchers, scientists, programmers, and users to profit from a plethora of different applications and services. With the advent of scientific computing, artificial intelligence, and Big-data, the usage of cloud services is increasing exponentially, absorbing 3% of the global energy consumption. In this scenario, the scientific community has started to consider the impact of these computing approaches on energy efficiency, carbon footprint, sustainability, and environmental impact point of views.

In this seminar I will discuss state-of-the-art approaches used in literature to mitigate the environmental impact of computing, considering different aspects such as sustainable-aware processes scheduling, sustainability evaluation metrics, application design, and virtual environments resource optimization to cite a few. Alongside the state-of-the-art, an overview of a possible approach for an efficient cloud computing model will be presented. Finally, the seminar will conclude on the open-research questions on sustainable computing and future research directions.