

# Colóquio de Física

CFUM, LIP-Minho, DF

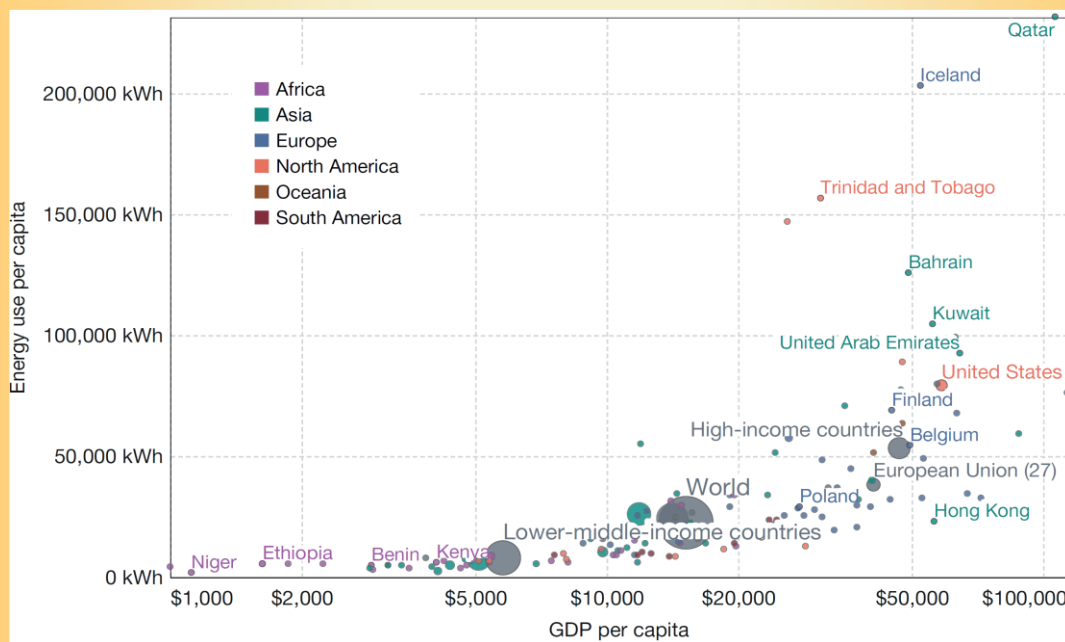
Terça-Feira, 1 de Outubro às 14:30h

Anfiteatro de Física, Escola de Ciências, Gualtar

## Energy, demand for computing power and the Green World

Nikolai A. Sobolev

i3N e Departamento de Física, Universidade de Aveiro, 3810-193 Aveiro, Portugal



**Figure: GDP per capita versus energy consumption in 2015. Source: Our World in Data. <https://ourworldindata.org/grapher/energy-use-per-capita-vs-gdp-per-capita>**

### Resumo:

The gross domestic product (GDP) per capita in different countries clearly correlates with the creation and use of energy sources.

However, the drawbacks resulting from the use of fossil fuels are colossal, and the rate at which renewable energy has grown has been outpaced by ever-growing energy demand.

Somewhat unexpectedly, electronics and telecommunications have become a major consumer of energy. Until 2012, computing power demand doubled every 24 months; recently this has shortened to approx. every 2 months. As a result, e.g. machine learning is on track to consume all the energy being supplied in the world.

In this talk, I'll analyse the efficiency and applicability of different technologies for producing energy and ways to reduce energy consumption.