Internet sustainability or Internet for sustainability: what really matters?

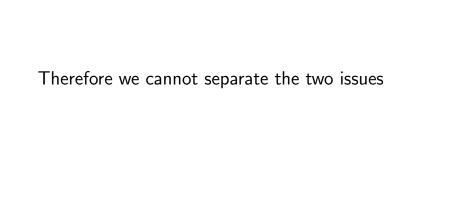
Brunilde Sansò
Professor
École Polytechnique de Montréal

Can we think of Internet for sustainability . . . with an <u>unsustainable</u> Internet?

Making systems more sustainable through Internet technology means more

- base stations
- wireless devices
- routers, switches, computers
- datacenters
- etc..

...a larger, more energy hungry and more ubiquitous Internet.



The question is What is the real meaning of Sustainability?

- ► Energy efficiency?
- or

Carbon efficiency?

- ► Can we say that an inefficient Internet system in Québec (100% hydroelectric) would really be more sustainable than an efficient one in Michigan?
 - Some people working in Green Networking claim that only carbon efficiency should be accounted for.
 - ► They also claim that energy efficiency in the end increases demand, and, therefore, consumption
- I disagree! In clean energy environments reducing consumption implies that more energy will be available for exports.

- ▶ We must try everything :
 - reduce Internet energy consumption
 - reduce Internet carbon footprintUse the Internet to reduce
 - . .
 - energy and
 - carbon footprint of other systems.

Research prospects

- Systematic Benchamarking
- ▶ Design and performance of on-off systems
- Protocols for on-off systems
- ▶ Network planning and operation with unreliable energy sources