

Open Wireless Sensor Networks for Development

Marco Zennaro

Aeronomy and RadioPropagation Laboratory
The Abdus Salam International Centre for Theoretical Physics
Trieste, Italy



- The Abdus Salam International Centre for Theoretical Physics was founded in 1964 in Trieste, Italy.
- The mission of the Centre is:
 - **to foster the growth of advanced research in physics and mathematics, especially among researchers from developing countries**
 - **to create an international forum for the exchange of scientific information through courses, workshops and seminars**
- The Centre hosts more than 6000 scientists per year (60% from Developing Countries, 40% from Developed ones).
- It had more than 100.000 visitors in the last 40 years.
- It is a UNESCO organization, supported by the Italian Government.

- ICT is a basic infrastructure necessary for the economic and social development of a country but also for its **scientific and technological progress**.
- The academic community is a fundamental starting point for these efforts to permeate to the rest of society.
- The underlying problem is the lack of sufficient well qualified human resources able to handle the new systems and technologies.
- 1993 to 1996 - Activities cosponsored with ITU/BDT
- 1998 - 1st School on the use of Radio for Digital Communications in Developing Countries, in collaboration with ITU/BDT
- **More than 40 activities, 1600 people!**

Training in Wireless for Development



Training in Wireless for Development



Training in Wireless for Development



www.wndw.net

- **Wireless Sensor Networks** are small devices that can sense the environment and send data wirelessly.
- The “Internet of Things”
- They have an enormous potential in Africa:
 - Environmental monitoring
 - Water quality
 - Agriculture
- We are investigating water quality in Malawi at KTH (Sweden)



- **Training is needed**, especially hands-on training.
- Many advantages for Universities:
 - small investment (~1000 euro)
 - research in a new field, still much to do
 - applications for civil society, link academia and community
- WSN4D?



Thank you for your attention!

Marco Zennaro

**Aeronomy and RadioPropagation Laboratory
The Abdus Salam International Centre for Theoretical Physics
Trieste, Italy**

mzennaro@ictp.it

<http://wireless.ictp.it>