

## **Interdisciplinary research in Underground laboratories**

**E. Coccia**

[andrea.giuliani@csnsm.in2p3.fr](mailto:andrea.giuliani@csnsm.in2p3.fr)

University of Rome and INFN Rome, Italy

### **ABSTRACT**

The existence of large underground facilities for astroparticle physics is also an opportunity to address central questions in other science fields, in particular in modern earth science, biology and engineering.

It is known that the very sensitive detectors measuring ultra-low radioactivity also find applications for environmental and hydro-geological measurements, radiochronology, and the control of the origin of manufactured products.

On the other hand, the subsurface environment is complex, with characteristics that set it apart from other materials. Understanding the coupled thermo-, hydro-, mechanical, chemical and biological properties of rock at depths of a few hundred to several thousand meters or more is increasingly important in a wide range of key studies and applications, from understanding the earthquakes, to understanding the role of underground microbial life in the development of all life.

I will report on the present non-astroparticle physics activities in underground laboratories and will discuss the possibility of the future development of these facilities as multidisciplinary platforms.