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Geoethics: a new way of thinking and managing the Earth

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The advancement of geological knowledge has historically allowed fundamental cultural steps to develop modern thought and to ensure progress and prosperity to our societies. In the past, geology posed issues of philosophy and even today it continues to be a stimulus for the cultural arena by posing problems and dilemmas that go beyond a strictly scientific context. Geology, through its methods, objectives, values of reference, ways of thinking about nature, provides not only a set of technical and scientific knowledge, useful to face complex problems in managing the Planet, but can also give cultural support which should guide the practical answer to those problems.

In recent years, the need to develop an ethical reflection on the values that are at the basis of geological practice and research has arisen powerfully. Studying the Earth system, managing the land, exploiting its geo-resources, intervening in natural processes are actions that involve great responsibilities towards oneself, colleagues, society and the environment, of which perhaps we, as geoscientists, are not sufficiently aware.

In order to find ethically sound solutions to the current global challenges, we need scientific advances in the field of geosciences to take into proper consideration the ethical and social aspects involved. Geoethics was born to define a framework in which geoscientists can find new references for thinking and managing the Earth.

Geoethics consists of research and reflection on the values which underpin appropriate behaviours and practices, wherever human activities interact with the geosphere [1]. Geoethics deals with the ethical, social and cultural implications of Earth Sciences education, research and practice, and with the social role and responsibility of geoscientists in conducting such activities [2]. Its objective is to identify shared values on which to base procedures and operational strategies, taking into account the different social and cultural contexts and the existing economic and political realities.

The effects of human interference with the geosphere have recently increased enormously compared to the past. Geologists, as scholars and experts of problems that affect our Planet, are faced with the need to consider in an ethical perspective issues such as the sustainable use of geo-resources, protection against natural hazards, pollution control and its inevitable repercussions on human health, and climate change.

Geoethics rediscovers and widens the cultural horizon of geological knowledge, orienting scientists and society in the choice of a responsible behavior towards the Earth system.

Geoethics recognizes that human beings are a geological force, capable of acting on natural environments, and in virtue of this prerogative assigns them an ethical responsibility that comes from the consciousness of being a modifier of those environments. Only becoming fully aware of this responsibility, can we work while respecting the biotic and abiotic components of the Earth.

This presentation will provide a framework of the emerging field of geoethics, focusing on theoretical aspects, possible problems in its development and positive perspectives.

References:

- [1] Wyss M. and Peppoloni S., Eds. (2015). *Geoethics, Ethical Challenges and Case Studies in Earth Sciences*. p. 450, Elsevier, ISBN 978-0127999357
- [2] Peppoloni S. and Di Capua G., Eds. (2015). *Geoethics: the Role and Responsibility of Geoscientists*. Geological Society, London, Special Publications, 419, ISBN 978-1-86239-726-2

