The Association of Applied Geochemists presents
the 23rd INTERNATIONAL APPLIED GEOCHEMISTRY SYMPOSIUM

# EXPLORING OUR ENVIRONMENT


*23rd IAGS 2007*
*Exploring our Environment*

**OVIEDO, ASTURIAS.**
**SPAIN**

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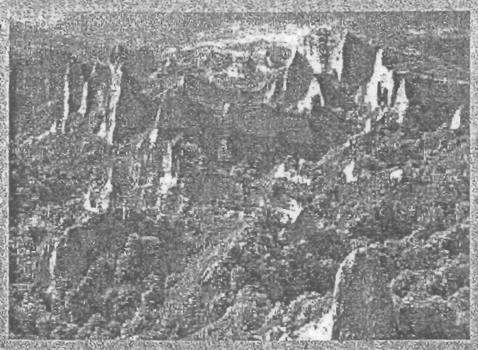

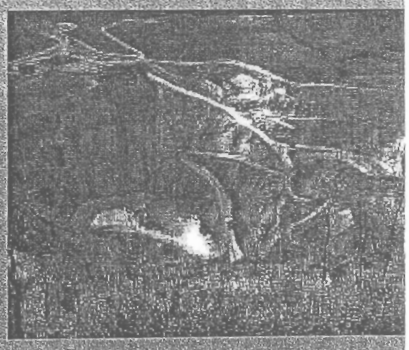

THE ASSOCIATION OF APPLIED GEOCHEMISTS

## Program & Abstracts

# Natural radioactivity, toxic metals pollution and epidemiology in the Campania region (Italy)

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## ABSTRACT

Values distribution of the standardized mortality ratio (SMR) for a wide range of neoplasm types have been compared to the distribution of metallic harmful elements (As, Cd, Co, Cr, Cu, Hg, Ni, Pb, Se, Sb, Tl, V, Zn) and radioactivity in soil and sediments of the Campania region (Italy). Distribution maps produced for gamma-ray spectrometry data ($^{40}K$, $^{238}U$, $^{232}Th$) and for harmful elements clearly show a correspondence of higher regional values with the occurrence of alkalic volcanic rocks (Roccamonfina, Campi Flegrei, Somma–Vesuvius, fissural sources of Campania Ignimbrites) in the central-western part of the region, which is also the most anthropized. In these latter area, the standardized mortality ratio (SMR), expressed as a percentage, calculated on the overall regional population for lung cancer and leukaemia is always above 110, implying that the naturally occurring radio-elements and the intense anthropic pressure on the environment could be one of the possible cause of increased cancer risk.