



Sr-Nd isotopic signatures in soils from the Muravera area (SE Sardinia, Italy)

F. Castorina and U. Masi

Department of Earth Sciences, University of Rome "La Sapienza", Italy
(francesca.castorina@uniroma1.it /Fax ++39064454729)

A study of soil mineralogy and radiogenic isotope (Sr and Nd) geochemistry has been carried out on five soil profiles developed on metasedimentary and limestone bedrocks in south-eastern Sardinia aimed at evaluating the contributions of Sr and Nd from the possible sources to the chronosequence of those soils. These latter, that are autochthonous and of Recent age, have developed under the Mediterranean climatic regime, with rainfall mainly in autumn and spring-time and dry warm summer. The soils are covered by the typical Mediterranean "macchia" vegetation, and are not disturbed by human activity, but are left to animals' pasture.

Sr- and Nd-isotope compositions change with depth in the soil profiles; in particular, $87\text{Sr}/86\text{Sr}$ ratios are far greater in the deep horizons, while $143\text{Nd}/144\text{Nd}$ ratios display inverse trends with decreasing values towards the uppermost organic-rich horizons. The range of $143\text{Nd}/144\text{Nd}$ ratios is always more restricted and less systematic than that of $87\text{Sr}/86\text{Sr}$ ratios.

As a whole, Sr and Nd isotopes suggest that the soil solution in the upper horizons of the various soils contains Sr and Nd provided by either an atmospheric source rich in seawater salts and a mineral source represented by the different bedrocks.