

## **ANTHROPIC MERCURY POLLUTION IN THE PERIURBAN AREA OF GENOA (ITALY): STREAM SEDIMENT EVIDENCE**

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A total of 51 samples of the fine-grained part (0.15 mm) of active stream sediments were collected, in June-July 1998, in the Bisagno valley (Genoa periurban area). The surveyed surface area is 93 km<sup>2</sup>, for an average density of 1 sample per 1.8 km<sup>2</sup>. Due to the great number of available chemical variables, data were processed by means of R-mode factor analysis, applying the varimax-raw rotational technique. The monoelemental map of Hg shows the presence of: (1) background values in the range 30-300 ppb and (2) a clear Hg anomaly, which extends for approximately 12 km from Bargagli, where the highest Hg content was detected (7900 ppb). As Hg is totally unrelated with the other 30 elements, this anomaly is attributable to anthropic pollution. Although in the investigated area there were industrial activities which could have manipulated significant amounts of Hg-bearing substances, we cannot anticipate here the exact nature of the contamination. It is nevertheless quite evident that some elemental Hg or some inorganic or organic Hg compound entered accidentally the Bisagno river some time ago. The progressive downstream transport of this material is evidently responsible of the Hg anomaly in active stream sediments. Moreover, the front of the Hg anomaly coincides with the Au-Ag anomaly. Admitting that elemental Hg entered the Bisagno river and moved downstream interacting with the sediments of the river-bed, it is possible that these Hg particles became Hg-Au-Ag amalgam grains through extraction and inglobation of fine particles of Au-Ag eventually disseminated in the sediments.