Geophysical Research Abstracts, Vol. 7, 04343, 2005 SRef-ID: 1607-7962/gra/EGU05-A-04343 © European Geosciences Union 2005



## 1 A Fallout Hazard Assessment Based on the Past Activity Through 25 ky BP at Somma-Vesuvius

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Somma-Vesuvius is composite volcano on the southern margin of Campanian Plain that have been active during the last 38 ky BP. This volcano poses a hazard and risk to the main population center dislocated around its base. The volcano, placed on a horst structure of the sedimentary basement, displaies a typical two peak morphology due to the Somma caldera structure in which the Mediaeval cone of Vesuvius is nested. Somma and Vesuvius are composed of 80 km<sup>3</sup> of interbedded lava flows and pyroclastic material which range from trachybasalt to trachite and tephrite - phonotephrite composition.

This report is based on the fieldwork and data analysis of the Plinian eruptions occurred in the last 25 ky BP. Eruptions of the Campi Flegrei – Campanian Plain volcanic area have also been taken in account. Summaries of upper air wind data for the southern Italy were compiled to characterise the prevailing wind condition in the region.

The data indicate that the north easterly trend of fallout reflects the startosphere wind direction prevailing during most of the eruptions of Somma-Vesuvius and that the south easterly wind direction is also prevailing during a considerable number of eruptions, both from Campi Flegrei and Somma-Vesuvius.

According to our model the south easterly is not an anomalous fallout direction as previous considered, since it has been shown that more typical winds of Somma-Vesuvius region might be distinguished in northeast or southeast direction. Any future plinian eruption of Somma-Vesuvius can be expected to send tephra toward these prevailing directions since winds higher 3000 m above the Campanian region more commonly blow toward northeast or southeast depending on the season.