



Googas: an on line database of Italian gas emissions

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On the basis of the researches done by INGV and by different Italian Universities in the framework of the INGV-Italian Civil Defence V5 (2004-2006) project named “Diffuse degassing in Italy”, a database of the Italian gas emissions, named Googas, was realised. The database is of public access (URL, <http://googas.ov.ingv.it>), and was developed using the tools of Google Maps. For each gas manifestation are available: name and coordinates, image of the emission, description of the gas emission, type (diffuse emission, vent, fumarole, spring etc.), main gas component and gas composition when available; temperature, gas flux magnitude, method of gas flux measurement, scientific references, downloadable files and contacts of researchers that have worked at the site. For each gas emission an evaluation of the potential hazard it is also provided. In fact some manifestations constitute an hazard both for animals and humans as testified by the occurred accident and by the field surveys. At this time, Googas database contains data from 271 gas emissions of Italy, most of that are concentrated in western sector of Italy. CO₂ constitutes the main gas component (233) even if in the eastern part of Italy and in Sicily are located gas emissions rich in CH₄. Qualitative or measured CO₂ fluxes are available for 153 CO₂ rich gas emissions. Of these, 14.4% releases “very high” flux (> 100 t d⁻¹), 34.6% “high flux” (100 t d⁻¹-10 t d⁻¹), 26.8% “medium flux” (1 t d⁻¹-10 t d⁻¹) and 24.2% “low flux” (<1 t d⁻¹). These results are of great importance indicating that previous assessments of the total gas emitted by natural manifestations in Italy were an underestimation, and reinforcing the idea that a large magnitude the earth degassing process is active. We think that Googas constitute a improvements on the knowledge Earth degassing process resulting useful both for “scientific” proposes and for the management of the gas

hazard by Civil Defence. In conclusion, Googas can represent a starting point for a global database of gas emissions.