

## DEGASSING FROM THE LITHOSPHERE AND ITS SURFACE DEPOSITS

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The contribution to the global atmosphere-ocean budget of CO<sub>2</sub> and CH<sub>4</sub> from degassing from the lithosphere and its covering deposits remains virtually unquantified. The reason for this is that many factors are unknown or badly known and others are very hard to quantify. We identify five main source areas each of which we will discuss: 1 the degassing associated with volcanism 2 the escape of gases originating within the upper mantle 3 the escape of gases originating from carbonate bearing rocks in the crust 4 the escape of gases from petroleum and geogas deposits in the sedimentary beds 5 the degassing from surface deposits and surface processes. When the gases escape through faults and fractures, seismotectonics plays an important role as controlling factor of the escape of gases. When it concerns the formation of methane hydrate and its sudden transformation into methane, this process seems closely related to the glacial/interglacial cycles. Phase transitions in the upper mantle (e.g. in association with the recently defined process of "sudden loss in lithospheric rigidity") are linked to the formations of gases and liquids.