Press Release

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When the ice melts, the Earth spews fire
GEOMAR researchers discover a link between climate and volcanic eruptions

19 December 2012/Kiel. **It has long been known that volcanic activity can cause short-term variations in climate. Now, researchers at the GEOMAR Helmholtz Centre for Ocean Research Kiel (Germany), together with colleagues from Harvard University (Cambridge, Massachusetts, USA) have found evidence that the reverse process also occurs: Climate affects volcanic activity. Their study is now online in the international journal "Geology".**

In 1991, it was a disaster for the villages nearby the erupting Philippine volcano Pinatubo. But the effects were felt even as far away as Europe. The volcano threw up many tons of ash and other particles into the atmosphere causing less sunlight than usual to reach the Earth's surface. For the first few years after the eruption, global temperatures dropped by half a degree. In general, volcanic eruptions can have a strong short-term impact on climate. Conversely, the idea that climate may also affect volcanic eruptions on a global scale and over long periods of time is completely new. Researchers at GEOMAR Helmholtz Centre for Ocean Research Kiel (Germany) and Harvard University in Massachusetts (USA) have now found strong evidence for this relationship from major volcanic eruptions around the Pacific Ocean over the past 1 million years. They have presented their results in the latest issue of the international journal "Geology".

The basic evidence for the discovery came from the work of the Collaborative Research Centre "Fluids and Volatiles in Subduction Zones (SFB 574). For more than ten years the project has been

impact from man-made warming is still unclear based on our current understanding" says Dr Kutterolf. The next step is to investigate shorter-term historical variations to better understand implications for the present day.

Reference:
Kutterolf, S., M. Jegen, J. X. Mitrovica, T. Kwasnitschka, A. Freundt, P. J. Huybers (2012): A detection of Milankovitch frequencies in global volcanic activity. Geology, G33419.1, http://dx.doi.org/10.1130/G33419.1

Links:
www.geomar.de GEOMAR Helmholtz Centre for Ocean Research Kiel

Pictures:
Images are available for download under www.geomar.de/n1047-e

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