Home
Online Library eE
- Recent Final Revised Papers
- Volumes and Issues
- Special Issues
- Library Search
- Title and Author Search

Online Library eED
General Information

Volumes and Issues Contents o

eEarth, 2, 1-5, 2007
www.electronic-earth.net/2/1/2007/
doi:10.5194/ee-2-1-2007

Fall-experiments on Merapi basaltic andesite an constraints on the generation of pyroclastic surg

L. M. Schwarzkopf[1,2], O. Spieler[1], B. Scheu[1], and D. B. Dingwel
[1]Earth & Environmental Sciences, Ludwig-Maximilians-Universität Münche Theresienstr. 41/III, 80333 München, Germany
[2]GeoDocCon, Unterpferdt 8, 95176 Konradsreuth, Germany

Abstract. We have performed fall-experiments with basaltic andes samples from Merapi volcano, using an apparatus designed to ana samples heated up to 850°C. Relative pressure changes during im fragmentation of the samples were measured by a pressure transd From 200°C, dynamic pressure waves were formed on impact and fragmentation. Peak and duration of the pressure signal, and degr fragmentation were found to strongly increase with increasing tem of rock samples. The pressure waves are most likely generated by heating of air forcing it to expand. We propose that the observed p changes are analogues to pyroclastic surges that may be generate impact and fragmentation of large blocks during passage of a pyro flow over a steep cliff. We infer that rock temperatures of ca. 400° sufficient for this process to occur, a temperature common in pyroc flows even in distal reaches.

Final Revised Paper (PDF, 871 KB) Supplement (2495 KB) Discussion Paper (eED)

Citation: Schwarzkopf, L. M., Spieler, O., Scheu, B., and Dingwell, D Fall-experiments on Merapi basaltic andesite and constraints on th generation of pyroclastic surges, eEarth, 2, 1-5, doi:10.5194/ee-2- 2007. Bibtex EndNote Reference Manager XML