

## Inverted Structure of Suevites at Bosumtwi Crater: Implications to Mixing of Outer Suevites

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The Bosumtwi impact crater in Ghana is one of the best-preserved large impact structures (Koeberl *et al.* 2007). Impactite lithologies at Bosumtwi include outer suevite deposits. The Bosumtwi suevite is found as either displaced blocks measuring up to several meters or as patches of suevitic material found N and SW of the crater (Boamah & Koeberl 2006).

In this contribution we study mineral and chemical composition of a suevite bed exposed at Sarpong Nkwanta, located north of the inner crater rim. The motivation of the study was to characterize the variation of the suevite composition in a 4.5 m thick section with emphasis on devitrification and alteration mineralogy.

Mineralogical analyses reveal gradual changes in lower part of the suevite deposit from a kaolinite-rich composition characteristic to clastic breccia below the suevite bed to a glass-rich suevite material largely devitrified to spinel-plagioclase and secondary cristobalite-smectite mineral phases. Kaolinite phase is detritic, originating from the weathering crust of the target-rock and its content decreases upwards in the outcrop section. In contrast, the content of plagioclase, spinel and impact glass alteration products – smectite and cristobalite – increases. Similar trends occur in major oxide composition, which show decrease in Al<sub>2</sub>O<sub>3</sub> and Fe<sub>2</sub>O<sub>3</sub>, and corresponding increase in SiO<sub>2</sub> and CaO.

Compositional trends at the lower boundary of the suevite bed imply to a contact zone that in our opinion refers to mixing of underlying clastic breccia and overlying suevite deposits due to the horizontal movement of the suevite complex during its formation.

### References:

Boamah, D., Koeberl, C., 2006. Petrographic studies of “fallout” suevite from outside the Bosumtwi impact structure, Ghana. MAPS 41, 1761-1774.

Koeberl, C., *et al.*, 2007. An international and multidisciplinary drilling project into a young complex impact structure: The 2004 ICDP Bosumtwi Crater Drilling Project – An overview. MAPS 42, 483-511.