

## Paleo-environmental study of the inter-trappean sediments in India, relation with Deccan volcanic activity

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### Context

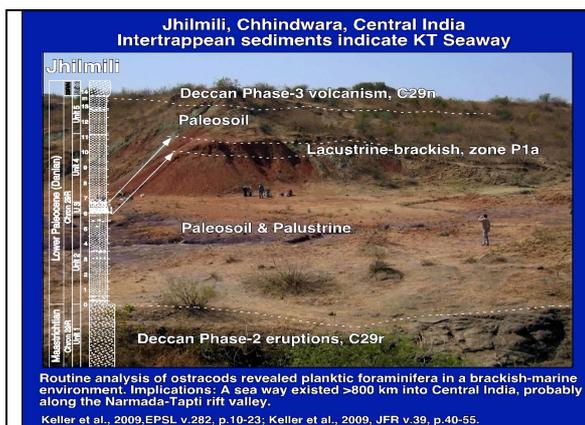
The following project is focused on the Deccan volcanic province, India. It is part of a research project of the Geological and Paleontological Institute of the University of Lausanne and a collaborative work with the Indian Geological Survey and the University of Nagpur, Maharashtra State, India (Prof. D. Mohabey and Dr. B. Samant). It consists of a multidisciplinary project combining a geochemical, sedimentological and biostratigraphical approach which will focus on the Cretaceous-Tertiary (K/T) mass extinction and particularly on the sediments deposited between the Deccan lava flows in India, considered as one of the main trigger of this extinction event.

### Objectives and Methods

The master student will conduct a detailed study of the intertrappean sediments with the main objectives to: (1) Evaluate the depositional environment of the intertrappean sediments based on sedimentology, mineralogy, microfacies and microfaunas (e.g., ostracods, diatoms, foraminifera). (2) Determine climatic and environmental conditions based on clay mineralogy and stable isotopes. (3) Evaluate the stratigraphy and age control based on (i) a review the paleomagnetic signals and volcanic chemostratigraphy sequence in the area of planned sections, (ii) Biostratigraphy based on planktic foraminifera, which permit placement of the K-T boundary in the sequences and its correlation to the global marine biostratigraphic record. In the different studied sections, the sediments located under and between the traps will be compared also to determine the paleoenvironmental changes induced by the Deccan activity.

### Literature

- Keller, G., Adatte, T., Bajpai, S., Mohabey, D.M., Widdowson, M., Khosla, A., Sharma, R., Khosla, S. C., Gertsch, B., Fleitmann, D., Sahni, A. 2009. K-T transition in Deccan traps and intertrappean beds in central India marks major marine Seaway across India. *EPSL*, 282, 1-4, 10-23.
- Keller, G., Adatte, T., Gardin, S., Bartolini, A., Bajpai, S. 2008. Main Deccan volcanism phase ends near the KT boundary, evidences from the Krishna-Godavari Basin, SE India. *EPSL*, 268, 3-4, 293-311
- Gertsch, B., Keller, G., Adatte, T., Garg, R., Prasad V., Berner, Z., Fleitmann, D. (2011) Environmental effects of Deccan volcanism across the Cretaceous Tertiary boundary transition in Meghalaya, India. *Earth and Planetary Science Letters* v. 310, pp. 272-285.



### Sites WEB

<http://www.unil.ch/Jahia/site/iste/op/edit/pid/91749>

### Choice of orientation :

Sedimentary, Environmental and Reservoir Geology