Testimony

Last year 2015 and this year in September my colleague geophysicist Jens Possekel and I gained experience with the newly developed low-frequency GPR equipment Roteg. Measurements were conducted by Rudolf Tengler and Dr. Pavel Kalenda at the Lake Tüttensee 600 m-diameter meteorite crater located in the Chiemgau impact strewn field in southeast Bavaria. The raw data were processed by Jens Possekel followed by a joint geologic interpretation of the processed radargrams. Our processing revealed a center frequency of 25 MHz for the bistatic antennae that were run on land as well as from boat on the lake water.

Since more than a dozen years quite familiar with various GPR equipments in particular in the 200 - 400 MHz frequency range for various applications we were greatly surprised, not to say open-mouthed, about the unexpectly high quality of the data down to considerable depth, both on land and on the more than 10 m deep water, although strong wind was not exactly favoring good data sampling. Without going into great detail the GPR results opened a fantastic insight into the crater rim wall internal structure and impact excavation processes, and for the first time we were able to definitely disprove all earlier hypotheses of a glacial dead-ice origin for that crater.

Summarizing, the demonstration of the Roteg equipment in a practical geologic-geophysical project was absolutely convincing. And with regard to many other applications for deep-seated targets (e.g., deep karst and penetration depths of the order of 50 - 100 m) pointed out and shown to me by Rudolf Tengler, it doesn't take much to see a very effective Roteg in promising and strong competition to reflection seismics for at least this depth range. That's exactly what I've written also in my contribution on "Geologic and geophysical investigations" for the "Handbook of Near-surface Geothermics" (in German) to appear in 2017 where I show examples of R. Tengler's very deep radar reflections.

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