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Can the traces of the impact events in the sedimentary sequences be recorded by rockmagnetic properties?

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Today the majority of researchers recognize that astronomical events can play an important role in the evolution of life on the Earth. For example, the link between the Great Ordovician biodiversification and the Middle Ordovician impact event, the latter being associated with the breakup of the parent body in the asteroid belt between Mars and Jupiter ~470 Ma, is currently hotly discussed. Thus, reconstructing the chronicle of impact events throughout geological history would be of great importance.

Sedimentary sequences are the most promising archive of impact events in the history of Earth, but methods for determining impact events in sedimentary deposits remain quite complex, time-consuming, and expensive. That is why we decided to consider the prospects of a relatively cheap express petromagnetic method for identifying traces of impact events in sedimentary records. To do this, we selected one of the most studied Ordovician Linna reference sections, where the presence of traces of the Middle Ordovician impact event was reliably established [1].

In this report we present the preliminary results of our current study and discuss the prospects of use of the main petromagnetic parameters to detect the impact events in the sedimentary records.

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References

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