

## **Serpentinization: an explanation for the current methan detection on Mars?**

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The current detection of methan in the martian atmosphere can be linked to a biological activity, past or present. However, some abiotic processes can also explain this presence of methan, this is therefore crucial to understand what those processes could be.

The aqueous alteration of olivine and pyroxene present in basalt coupled with a highly concentrated CO<sub>2</sub> environment can produce methan and more complex organic molecules. The chemical reactions involved in this abiotic methan production are well knowed but not under the martian conditions, in particular by considering the presence of catalyst elements.

By an experimental approach, we start to determine the methan production capacity of thoses processes in martian conditions, and then linked it to remote sensing data of the martian surface where alteration mineral can be observed.

We will mainly focus here on the first results of the experiments, the linking with remote sensing data will be mainly done in the future in particular with the ExoMars 2020 mission.