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**Oxygen and silicon isotopic composition of Precambrian cherts : what constraints do they bring on seawater temperatures ?**

Precambrian cherts are characterized by  $^{18}\text{O}$ -poor oxygen isotopic compositions relative to their modern equivalents, which has been interpreted as reflecting higher seawater temperatures in the early Precambrian. Micrometer scale variations of O and Si isotopic compositions in Precambrian cherts allow to make progress in this debate and to test the validity and robustness of temperature reconstructions from O isotopes. These new data bring new criteria to (i) identify the nature (sedimentary or not) of cherts, (ii) to quantify the preservation of the isotopic signal and the influence of hydrothermal perturbations and (iii) to "correct" the estimate of seawater temperature from isotopic exchanges which took place during diagenesis. After all, the isotopic ranges observed can still be explained by a  $\approx 50^\circ\text{C}$  decrease of seawater temperatures over the Precambrian.