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**Raman carbon thermometry constraints of low temperature carbonaceous chondrites and volatile-rich clasts.**

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Peak temperatures of eight different carbonaceous chondrites and 30 different volatile-rich clasts were estimated using carbon thermometry [1]. The spectra were decomposed in four peaks after [2]. Based on mineralogy, volatile-rich clasts were divided into CI- and CM-like clasts, due to their similarity to CI and CM chondrites. They show temperatures ranging from ~30 - 110 °C with an average of roughly  $65 \pm 25$  °C. These temperatures agree with the estimated peak temperatures of six low temperature carbonaceous chondrites that are in the range of 50-73 °C. Both clast types and the carbonaceous chondrites share similarities in mineral composition and texture as well as estimated peak temperatures. The carbonaceous chondrites that were used as standards agree well with the literature data proving a robust technique [e.g. 3].

[1] Beyssac O. et al. (2002) *JMG* 20:859-871. [2]

Homma Y. et al. (2015) *JMPS* 110:276-282. [3]

Huss G. R. (2006) *MESS II* 943:567-586.

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