Supplement of

Variability of sulfate signal in ice core records based on five replicate cores

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Gfeller et al. (2014) method relies on calculating inter-series correlation (expressed as $R_{n,N}$, $n$ being a subset of $N$ time series). To calculate the representativeness of the mean of a given subset of cores, and by letting $N$ going to infinity (simulating a fictive infinite number of cores), Gfeller et al. (2014) use the $\bar{R}^2_{n,\infty}$ proxy. We used the same proxy of sulfate representativeness on Dome C 5 cores and obtained the following results:

<table>
<thead>
<tr>
<th>$n$ (number of cores)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\bar{R}^2_{n,\infty} \text{ SO}_4^{2-}$</td>
<td>0.72</td>
<td>0.84</td>
<td>0.89</td>
<td>0.91</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Figure S1: Representativeness of sulfate in the cores ($\bar{R}^2_{n,\infty}$) as a function on the number of cores $n$ (based on https://www.ncdc.noaa.gov/data-access/paleoclimatology-data et al., 2014 approach).

References

Figure S2 - Variation of the background along depth in core 1, red dots are detected peaks, the dark line stands for the background concentration.