

*Supplement of*

**Dust record in an ice core from tropical Andes (Nevado Illimani – Bolivia), potential for climate variability analyses in the Amazon basin**

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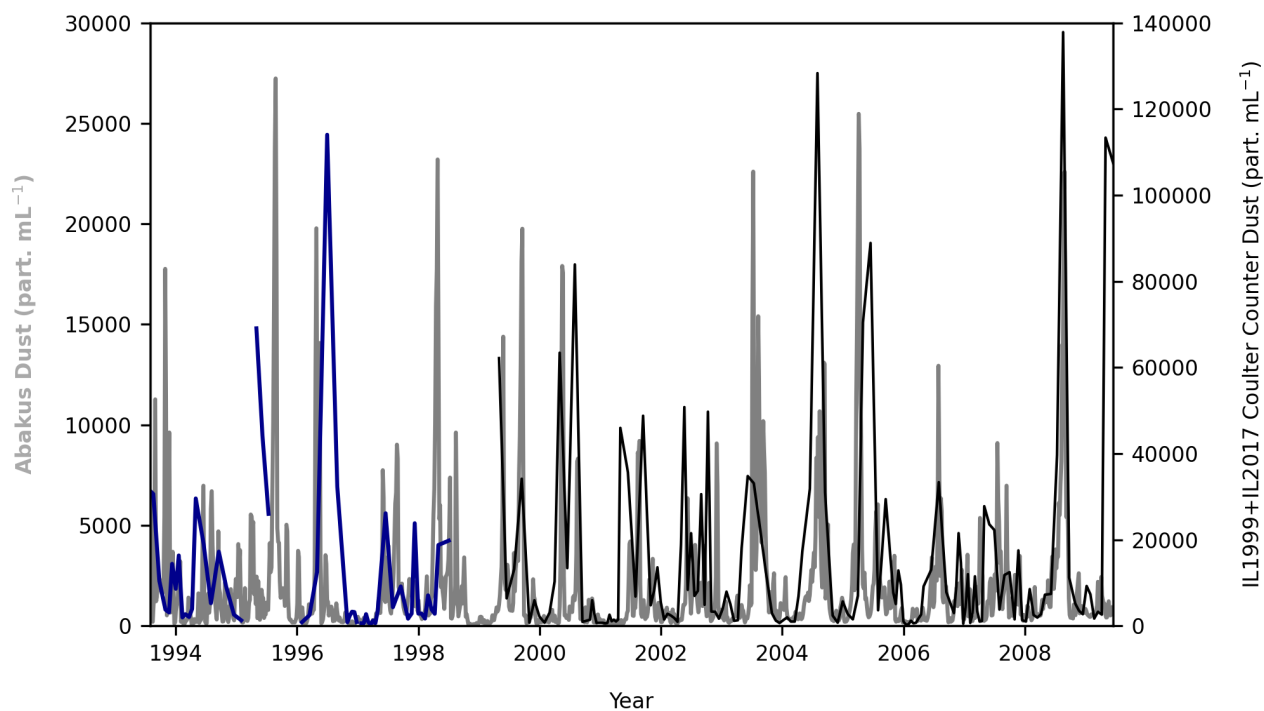
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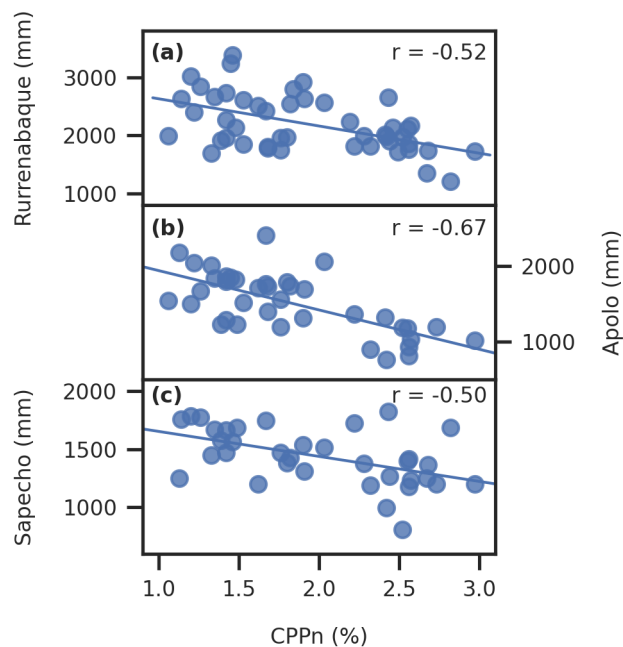
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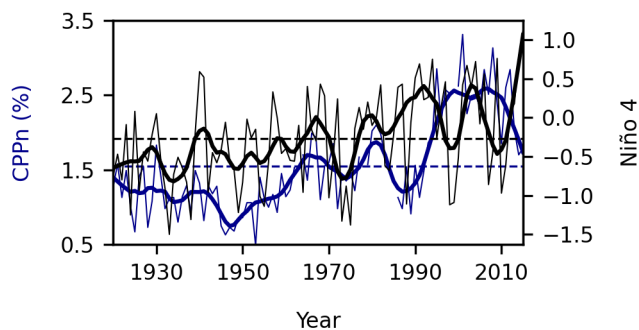
**Figure S1.** Overlapping between the dust measurements made with the Coulter Counter for both IL1999 (blue line) and IL2017 (black line) cores, and the ones made with Abakus for the IL2009 core (gray line). Abakus data was resampled to 5 samples per month. Concentrations were measured on different size ranges ( $2\text{--}20\ \mu\text{m}$  for Coulter Counter) and ( $1\text{--}100\ \mu\text{m}$  for Abakus).

**Table S1.** Characteristics of the aerial photographs used in the study.

Date	Scale	Number of photos	Focal length (mm)
1956	1:36000	2	153.35
1963	1:29000	2	152.44
1975	1:63000	2	152.22
1983	1:41000	2	153.26
2009	1:33000	4	152.67



**Figure S2.** Relationship between the coarse particles percentage (CPPn, 3-year moving average) and annual precipitation measured by three meteorological stations in the Bolivian Amazon (Fig. 1a), (a) Rurrenabaque (1965–2015 period), (b) Apolo (1965–2006 period), and (c) Sapecho (1972–2011 period). The correlation coefficients (significant at the 95% level) are indicated in the upper right position of each plot.



**Figure S3.** Relationship between the coarse particles percentage in terms of number (CPPn), and sea surface temperature anomalies in the tropical Pacific region Niño 4 referenced to the 1981–2010 period. Thinner lines correspond to annually resolved data. Thicker lines correspond to the 10-year LOWESS smoothed data. Horizontal dashed lines highlight the mean for each parameter.