Clim. Past Discuss.,
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Climate of the Past Discussions

Interactive comment on "Past African dust inputs in Western Mediterranean area controlled by the complex interaction between ITCZ, NAO and TSI" *by* P. Sabatier et al.

Anonymous Referee #1

Received and published: 4 October 2019

The manuscript deals about a high-resolution record of Late Holocene Saharan dust supply into a mountainous lake on Corsica Island. The authors postulate the Intertropical Convergence Zone (ITCZ), the North Atlantic Oscillation (NAO) and solar irradiance (TSI) as major drivers for Saharan dust supply into the Western Mediterranean.

The manuscript provides generally an important issue as high-resolution records of Holocene Saharan dust emissions are rare and might be of interest for a broad international readership.

The presented study provides some excellent (pre-)conditions: the study site is well chosen. The lake is within a mountainous environment and provides a small catch-

ment/lake surface ratio. These are very good pre-conditions for the reconstruction of a Saharan dust record. The catchment is free of carbonates. Therefore, hard-water effects do not influence 14C age control. The catchment consists of granodiorite. Therefore, catchment soil erosion is probably limited and the amount of Saharan dust of the silici-clastic fraction might be significant. Furthermore, the authors detect Palygorskite as clay mineral tracer in their record, generally indicating evidence for Saharan dust supply.

The study provides quantitative information about element contents in the core and in the lake's catchment, an important precondition for the use of element ratios as reliable proxies for Saharan dust input.

I have only few minor points:

Abstract

The abstract is generally well written.

Main text

Page 2 Line 5. What do you mean with Mt? Please explain the abbreviation, when you use it the first time.

Page 2 Line 16. please delete "In"

Page 3 Line 3. What do you mean with PSA? Please explain the abbreviation, when you use it the first time.

Page 3 line 15. Do you mean rubbles or screes? What is the genesis of the screes? Fluvial transport?

Page 5 line 22 dust proxy instead of Dust proxy

Page 6 line 17. Does the mean grain size (D50) correspond with remote aeolian dust? This should be discussed in the discussion chapter. You might discuss grain size end-

members as well.

Page 8 line 8. An enhanced I/K ratio. . .

Page 9 lines 13-18. This paragraph does not correspond to the subject of this chapter. You might delete this sentence.

Page 10 line 1. You may cite the new Lake Sidi Ali dust record here (2017, QSR) that show reduced dust supply into the Western Mediterranean during the AHP. The reference is already in your reference list.

Page 10 line 2. You mean increase in summer orbital insolation?

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