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Interactive comment on “A fine fraction of soil used as an aerosol analogue during the DUNE experiment: sequential solubility in water with step-by-step decreasing pH” by C. Aghnatiros et al.

Anonymous Referee #1

Received and published: 28 February 2014

This is a very well written paper in the suite of other papers within the DUNE project and I recommend it for publication with only minor changes. In the experiment presented here, one of the dusts prepared for the DUNE project was used: sample Q, unprocessed soil dust from a Tunisian soil considered to mimic atmospheric transported Saharan dust to the Mediterranean. The authors submitted a fraction (10 mg) of this unprocessed dust to several leaching steps with successive acidic solutions (100 mL of solution pH from lab water, pH 5, pH 3 and pH 1). This was designed with the aim to determine de solubility of the nutrients and micronutrients (Ca, Sr, Ba, Mn, Fe, Al and P) when dust comes in contact with different types of wet conditions (from non polluted rainwater at high pH to cloud acidic droplets) so that

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inferences and comparisons of the behavior of dust can be made with experiments where dust is introduced in a mesocosm experiment. The experiment is well designed and described and results are correctly presented and discussed. Nonetheless I will suggest a few modifications and clarifications.

BGD

11, C140–C141, 2014

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/11/C140/2014/bgd-11-C140-2014-supplement.pdf>

Interactive comment on Biogeosciences Discuss., 11, 2623, 2014.

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