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Interactive comment on "Atmospheric significance of aeolian salts in the sandy deserts of northwestern China" *by* B.-Q. Zhu

B.ÂăQ. Zhu

ztyigcas@sina.com

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Reply to 'Interactive comment on "Atmospheric significance of aeolian salts in the sandy deserts of northwestern China" by B.-Q. Zhu" by Direct Shao (Referee)' (Solid Earth Discuss., 7, C1569-C1569, 2015)

B.-Q. Zhu Key Laboratory of Water Cycle and Related Land Surface Processes, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing 100101, China zhubingqi@igsnrr.ac.cn

The interactive comment by Direct Shao (Solid Earth Discuss., 7, C1569-C1569, 2015) on my paper "Atmospheric significance of aeolian salts in the sandy deserts of northwestern China" (in Solid Earth Discuss, 7, 3409-3440, 2015) proposed two minor

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revisions. I accept these instructive suggestions and revised the paper accordingly. I show the detailed revisions as below: (1) Names of the targeted sandy deserts in this study are inserted in some figures, including Figs. 3a-d, 6-9. (also shown in the figures uploaded). (2) More references related to Professor Artemi Cerda and her coauthors in SD and other journals for the past 10 years are searched by the author. Some of these papers relevant to this paper are cited and added into the paper for a more extensive Introduction and Discussion (seen the revised manuscript attached). The detail revisions are also shown as below: [page 3411 lines 22-29] Researches about salt formation have been performed worldwide in different arid conditions, with the main purpose to identify the relationship between salt regime and environmental factors, for instance, salt formation in different clay type (Rengasamy et al., 1984), fire ashes (Lasanta and Cerda, 2005; Bodi et al., 2012, 2014), soil erosion (Lasanta and Cerda, 2005; Cerda et al., 2013; Agata et al., 2015), hydrological distribution (Borchert and Muir, 1964; Warren, 2006; Bodi et al., 2012), geomorphologic setting and dust source (Wang et al., 2008), volcanism and atmospheric fixation (Oyarzun and Oyarzun, 2007), rainfall patterns (Ahuja, 1990; Dragovich and Dominis, 2008) and mean annual climatic conditions (Dan and Yaalon, 1982; Lavee et al., 1991; Pariente, 2001), ... The added references are listed as below: Agata, N., Cerda, A., Carmelo, D., Giuseppe, LP., Antonino, S., and Luciano, G.: Effectiveness of carbon isotopic signature for estimating soil erosion and deposition rates in Sicilian vineyards. Soil and Tillage Research, 152, 1-7, 2015. Bodi, M.B., Doerr, S.H., Cerda, A., and Mataix-Solera, J.: Hydrological effects of a layer of vegetation ash on underlying wettable and water repellent soil. Geoderma, 191, 14-23, 2012. Bodi, M.B., Martin, D.A., Balfour, V.N., Santin, C., Doerr, S.H., Pereira. P., Cerda, A., and Mataix-Solera J.: Wildland fire ash: Production, composition and eco-hydro-geomorphic effects. Earth-Science Reviews, 130, 103-127, 2014. Cerda, A., Brazier, R., Nearing, M., and de Vente, J.: Scales and erosion. Catena, 102, 1-2, 2013. Lasanta, T. and Cerda, A.: Long-term erosional responses after fire in the Central Spanish Pyrenees: 2. Solute release. Catena, 60, 81-100, 2005.

SED

7, C1588–C1595, 2015

Please also note the supplement to this comment:
http://www.solid-earth-discuss.net/7/C1588/2015/sed-7-C1588-2015-supplement.pdf

Interactive comment on Solid Earth Discuss., 7, 3409, 2015.

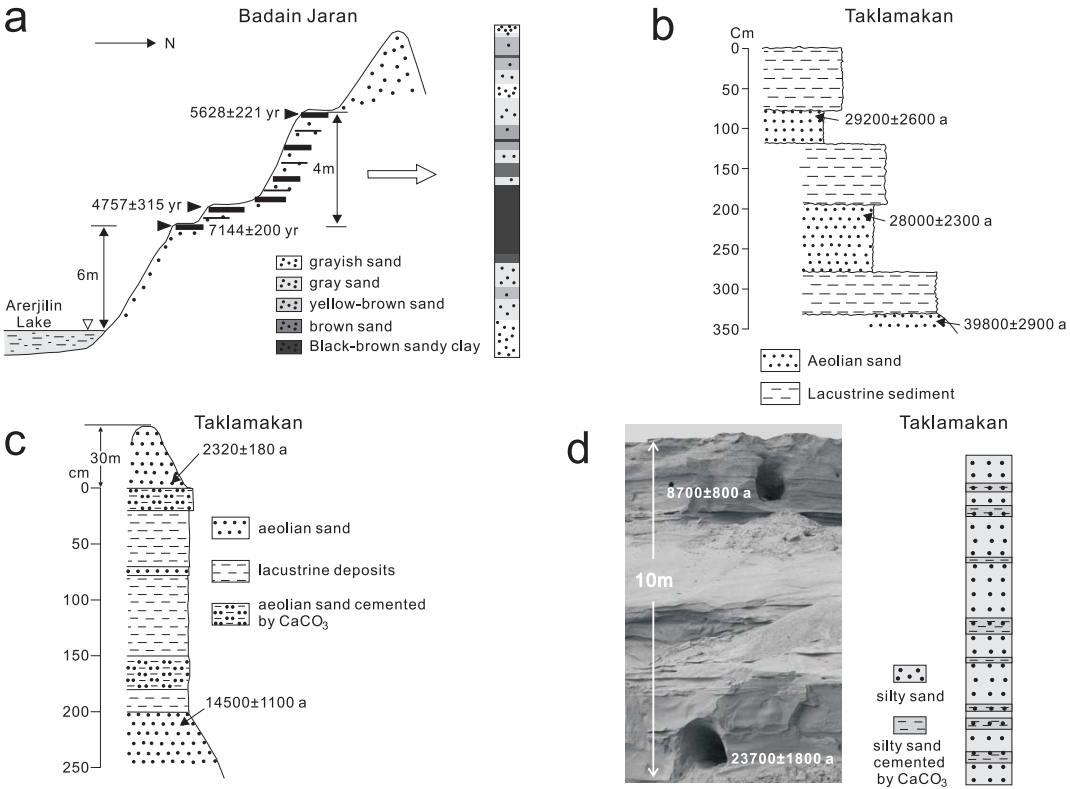

Fig. 1. Figure 3 Sketch maps of the sedimentary profiles studied in this study. (a) Lacustrine sediments interbedded by aeolian sand layers with P14PC ages at the Arerjilin-I section in the Badain Jaran Deser

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SED
7, C1588–C1595, 2015

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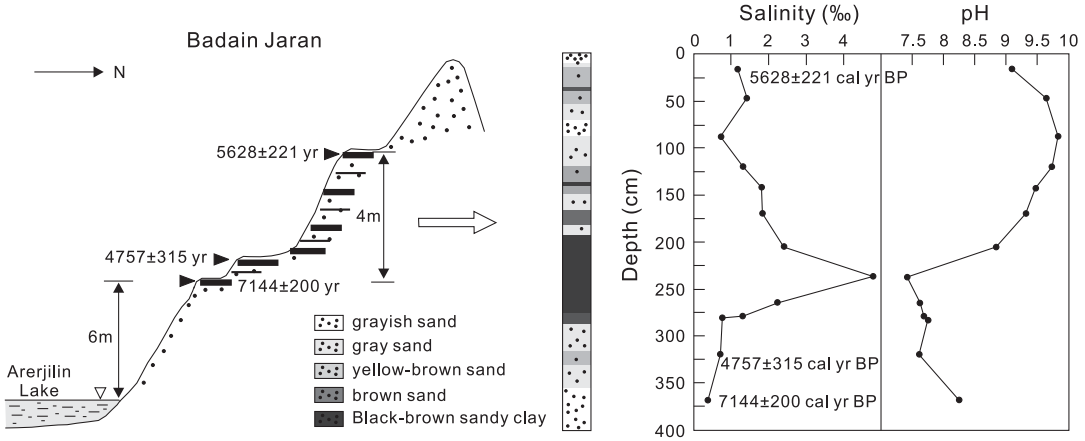

Fig. 2. Figure 6 Sequential variations in soluble salts contents (salinity and pH) of the Arerjilin-I section in the Badain Jaran Desert.

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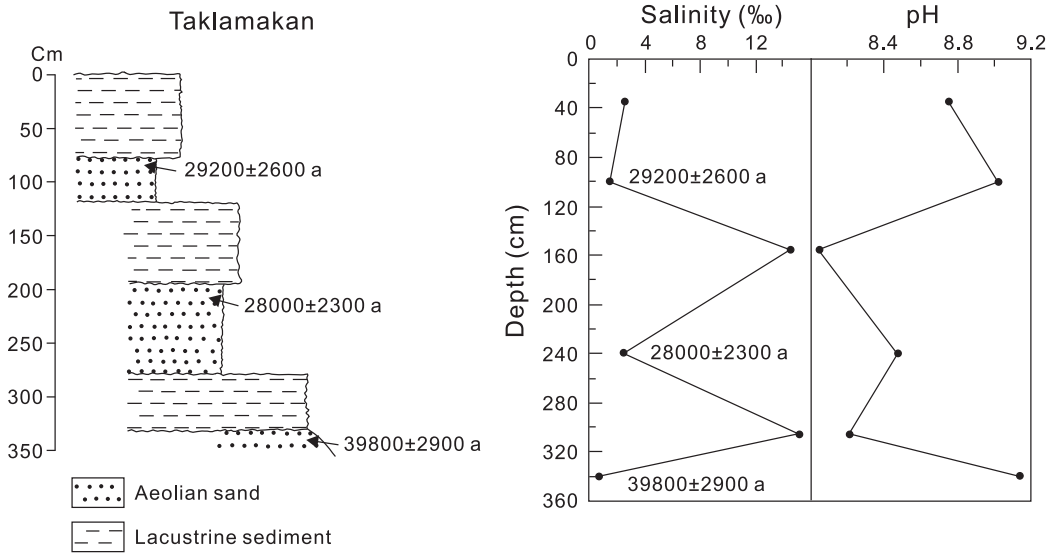

Fig. 3. Figure 7 Sequential variations in soluble salts contents (salinity and pH) of the Tazhong-XIII section in the Taklamakan Desert.

SED
7, C1588–C1595, 2015

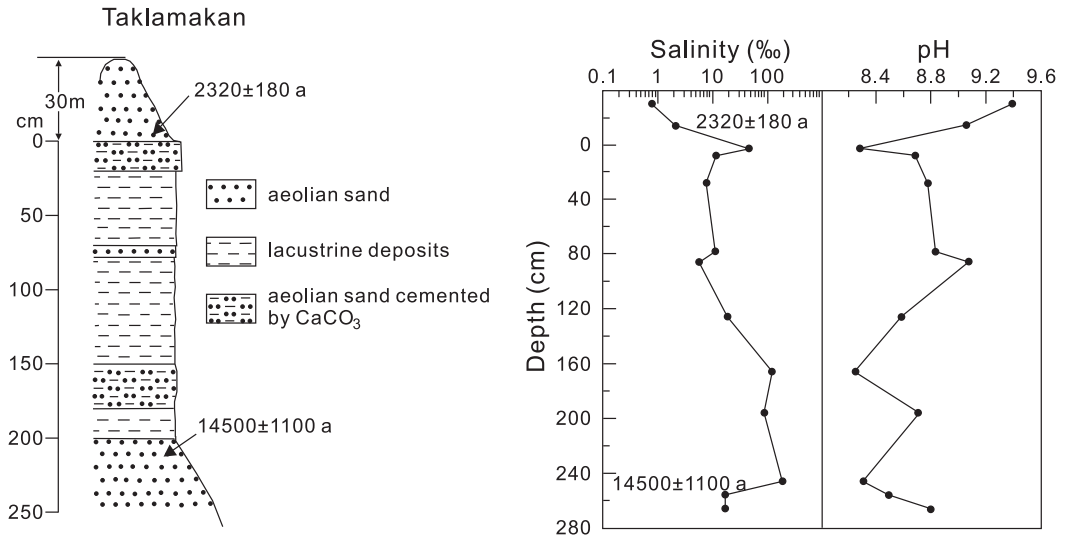

Fig. 4. Figure 8 Sequential variations in soluble salts contents (salinity and pH) of the Yaogan-VIII section in the Taklamakan Desert.

SED
7, C1588–C1595, 2015

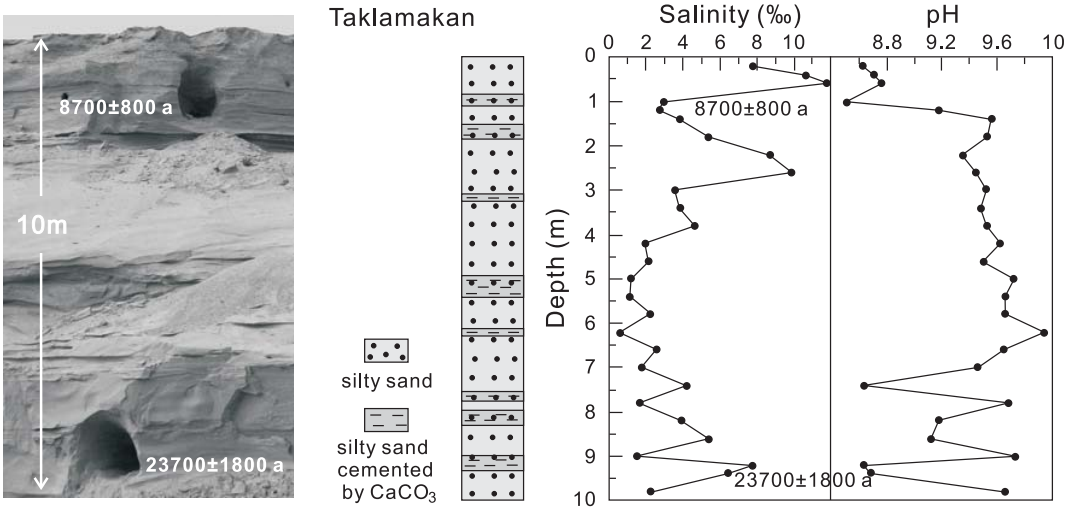

Fig. 5. Figure 9 Sequential variations in soluble salts contents (salinity and pH) of the Tumiya-II section in the Taklamakan Desert.

SED
7, C1588–C1595, 2015