

Interactive comment on “Technical note: A new approach for comparing soil depth profiles using bootstrapped Loess regression (BLR)” by A. M. Keith et al.

Anonymous Referee #3

Received and published: 9 February 2016

This paper presents a "new" approach for comparing soil depth profiles using bootstrapped Loess regression. The authors proposed loess regression to model soil profile distribution of Carbon. One big assumption that is not considered in this paper is on the "support" of the measurement. Most soil observations are based on an average value for a particular depth interval. E.g. based on a fixed depth interval or based on an average of a horizon or layer. Such loess function considers punctual or point observation. There is a whole discussion on this topic on the reason of using equal-area smoothing spline function. See Bishop et al. Bishop, T. F. A., A. B. McBratney, and G. M. Laslett. "Modelling soil attribute depth functions with equal-area quadratic smoothing splines." *Geoderma* 91.1 (1999): 27-45.

C9600

The authors argue that the loess function " does not assume constant values for soil layers or horizons", however it does not guarantee an equal-area criteria.

Thus this paper completely missed the point.

Interactive comment on Biogeosciences Discuss., 12, 19199, 2015.