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Interactive comment on "Alaskan soil carbon stocks: spatial variability and dependence on environmental factors" *by* U. Mishra and W. J. Riley

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This study constitutes the first application of regression (or similar kriging) approaches to estimating soil C storage in permafrost terrain. While previous authors have successfully used large pedon databases to assess soil C storage in the Alaskan geographical region, the method of upscaling has been to use stratified thematic mean upscaling. See Hugelius (2012, Global Biogeochem. Cycl., doi: 10.1029/2011GB004154) for a comprehensive discussion of using stratified upscaling in remote geographic regions. This study by Mishra and Riley provides a first indication that more data-intensive methods utilizing multiple, spatially explicit, environmental variables (e.g. geographic regres-

sion or kriging) to predict soil C storage are applicable also to permafrost soils. This points to a potential way forward for developing scientific knowledge concerning poorly constrained estimates of the vast permafrost C pool.

Interactive comment on Biogeosciences Discuss., 9, 5695, 2012.