28 March 2022

Dr. Jungho Im

Editor in Chief

*GIScience & Remote Sensing*

Dear Editors,

Enclosed please find the manuscript: “Filtering ground noise from LiDAR returns produces inferior models of forest aboveground biomass.” We request that this manuscript be considered for publication in *GIScience & Remote Sensing.* This paper describes original research that has not been previously published, nor has it been submitted for publication elsewhere. Furthermore, its publication has been approved by my co-authors[[1]](#footnote-2) and the institute where the work has been carried out.

We believe that this study of the negative impacts of a common data pre-processing method constitutes a novel and important contribution to the field. We found that filtering “ground noise” from airborne LiDAR point clouds using simple height thresholds systematically biases common predictors derived from those point clouds, which in turn produce inferior models of forest biomass. Models of forest biomass for mixed-use and heterogeneous landscapes were particularly impacted by this procedure. Given the increasing numbers of regional and landscape-scale biomass mapping projects, the increasing prevalence of “wall-to-wall” maps of forest biomass incorporating marginal forestlands, and the prevalence of this pre-processing procedure throughout the literature, we believe that our findings will have widespread interest among the readers of *GIScience & Remote Sensing*.

We appreciate your consideration of this manuscript.

Sincerely,

Michael Mahoney

Graduate Program in Environmental Science  
SUNY College of Environmental Science and Forestry

1. Lucas K. Johnson, Eddie Bevilacqua, and Colin M. Beier (State University of New York – College of Environmental Science and Forestry) [↑](#footnote-ref-2)