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Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2013_BJMCS_6050
Title of the Manuscript:	Modeling Crop Residue Yield Potential using Geographically Weighted Regression
Type of the Article	Research Paper

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	The reviewer found it hard to categorize the paper as a research paper because of lack of technical innovation. The comparative study presented in the paper confirmed that GWR outperforms OLS for the geographically varied data, but that is not new, rather it is the very reason how GWR was invented. In one place where the paper seems to be innovative, i.e., the spatial heterogeneity of the individual parameters in GWR, the results are however mixed. Although the authors claimed in the abstract that, "more importantly, it was demonstrated that the data set would have to be large enough for the individual parameters of GWR models to be spatially heterogeneous", it is not clear how large is large enough. It seems to the reviewer that the paper can be strengthened if the further study can be carried out on more datasets with varied sizes, instead of just one small and one large, so a threshold in the data size may be identified that coincides with a tipping point in spatial heterogeneity, and better still tie this to the model performance, much like what has been suggested with respect to the data size ($n \sim 160$, as cited in the paper) when GWR is considered applicable.	As Paez et. al. (2011) declared via simulation studies, GWR is not recommended for data sets where sample size is less than 160. For verification purpose, we again tested for a new data sets with 194 counties (2 states, Illinois and Indiana of the USA), and that the conclusion of large data set is supported here as well. Hence, we believe 160 as the bottom line which has already been mentioned by Paez et al. Paez et al have not shown the comparative study using real world data set with different sample size, this is what we did. We mentioned that one should be cautious while drawing conclusions from such outputs because GWR is an exploratory process (Bivand et al, 2008), and it is more preferred for exploratory process rather than drawing statistical inferences.



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<u>Minor</u> REVISION comments	Line 118: the comma after "parameter r" should be removed.	The comma is removed now.
<u>Optional/General</u> comments	The paper presents a comparative study of geographically weighted regression (GWR) with ordinary least squares (OLS) using the crop residue yield potential data from 10 western states of the USA. The study examines the model performance and model parameter spatial heterogeneity in two different cases: small data and large data. As expected, the study found that GWR outperforms OLS in all cases, though two out of the three parameters in GWR did not show spatial heterogeneity in the small dataset. The study seems to be technically sound, even though there is a lack of innovation. The paper is well organized and clearly written.	Thanks for such comments.