



SDI Review Form 1.6

Journal Name:	<a href="#">Physical Science International Journal</a>
Manuscript Number:	Ms_PSIJ_55253
Title of the Manuscript:	Characterization of Ka-band Radar Observations for Different Rain Types over Akure, Nigeria.
Type of the Article	Review Article

**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. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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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)
<b>Compulsory</b> REVISION comments	<ol style="list-style-type: none"> <li>1. A correlation (even statistical, if possible) of radar signal parameters with specific rainfall parameters (included in the ETCCDI Indices of Extremes) would be very relevant for the four periods of time taken into consideration;</li> <li>2. If available, corresponding upper air-sounding charts should also be provided, to better correlate the heights at which the radar signals are reflected back and the levels at which condensation or nucleation processes occur inside Stratiformis or convective clouds;</li> <li>3. A short climatological survey on rainfall amounts and their distribution in space and time over the area where the radar equipment is located, would also be useful.</li> <li>4. Please also provide some basic meteorological traits for the nearest location available, over the four distinct moments of time when the radar measurements were made (you could consult METAR message on OGIMET webpage).</li> </ol>	
<b>Minor</b> REVISION comments	A minor revision of the English language is also recommended.	
<b>Optional/General</b> comments	<p>Well, sorry for this comparison but this article reminded me of a post-technological SF scene in which an android analyses the smell of a flower by means of all sorts of ultra-high technologies and describes it in a large sequence of quantitative data. In this case, the present study shows how it may rain over Akure (Nigeria) by the way the radar signals are reflected back by the water droplets or ice crystals in the clouds.... There is nothing wrong in this, on the contrary, the approach is interesting, though not original in the meteorological literature. The authors of this article had an inspiring idea and conducted a good experiment, well-accounted for in terms of the observation set-up, instrumentation, theoretical bases, methodology and data pre-processing pre-requisites, thus obtaining interesting concrete results. Basically, by means of a vertically-pointing micro rain radar (MRR) with an operating frequency of 24.1 GHz, this study analyses the vertical profiles of rains falling from either low or high clouds. In this respect, the authors have selected four rain parameters: rain rate (RR), liquid water content (LWC), fall speed (W), and radar reflectivity (Z) for different rain classes falling during the months of November 2013, April 2014, June 2014 and September 2014 respectively. They chose these specific months as they considered them as being characteristic for four major climatological patterns: the beginning of dry season months, onset of rainy season months, low-level cloud period and onset of convective rainy period respectively. The results being obtained are indeed original and valuable, especially that they are very clearly explained on accompanying high-resolution graphs. The findings are highly reliable and practical, providing very accurate data on the type of precipitations and the heights at which they may form in upper atmosphere, so that inspired actions could be taken for rain attenuation processes, especially in the case of convective clouds. Overall, the present article brings forth an important amount of added value to the scientific efforts of finding new ways and methods of investigating the weather processes, mainly in areas with complex meteorological contexts, as in the case of inter-tropical regions.</p>	



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**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> (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)
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

**Reviewer Details:**

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