SCIENCEDOMAIN *international*
www.sciencedomain.org

SDI Review Form 1.6

Journal Name:	**Physical Science International Journal**
Manuscript Number:	**Ms_PSIJ_37789**
Title of the Manuscript:	**Dynamics of low energy gamma rays near ground level during July to September 2017, in São José dos Campos, SP, Brazil.**
Type of the 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)

SDI Review Form 1.6

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 subject of this paper is interesting, but the way of its presentation is poor.** **The detailed comments and suggestions:** **1. Introduction** **The authors did not mention about an important component of gamma radiation background, i.e. cosmogenic isotopes Be-7, Na-22. I suggest to complete this information.** **2. Materials and Methods** **- Please add more information about spectroscopy system used in the experiment. Authors give only information (dimension) about NaI detector but it is important and relevant - information about the whole spectrometry system, e.g. type of MCA, MemBuf, Amplifier, etc.** **- What were the conditions of performing measurements ?** **Were the door, windows open ? Was the air exchange ensured during the measurements ? These conditions influence strongly indoor radon and its progeny concentration, and thus influence the gamma radiation intensity. This information must be given in the paper.** **Line 46-48** **"...This experimental set is seen in Figure 1 located in the inner room of a tower, 25 meters high in relation to the ground (ACA tower), belonging to the Institute of Aeronautics and Space (IAE)...."** - **The more detailed information about location of measurement place (GPS, map, etc) should be given.** **Line 54-56** **The set (scintillator + associated a charged battery to measure radiation for up to 5 continuous hours. However, for series of long measurements it uses electrical network or photovoltaic energy.** **- I suggest to remove this part - this information doesn't bring anything new.** **3. Results and Discussions** **- The reference for all figures is "Project Atmosrad 2017". The authors did not mention about this project, there are also no references in the bibliography. Are the authors participants of that project ? This must be explained in the manuscript.** **- There is green line marked in figures. What does it represent ? How was it determined ? This must be explained.** **- There is a legend in figures, I suppose it is a data filename. What does a**	

	word "acalta" mean ? **- In Fig.3 the start and end of measurement series is marked. The same should be done in Figs. 4,5,6.** **- The Y axis title "gamma" in Figs. 4,5,6,7 is incorrect! It should be "gamma radiation intensity". Also the unit must be added [counts/min]** **- Figure captions are incorrect:** ***Figure-3. Monitoring of gamma radiation in the room at the top of the tower.*** ***Figure-4. Monitoring of gamma radiation between the start time and 70 x 10 3 minutes.*** ***Figure-5. Gamma radiation monitoring during the rainy week.*** ***Figure-6. Monitoring of radiation during two cold front passages in the region.Radiation monitoring on dry soil hot by day and cold at night.*** ***Figure-7. Radiation monitoring on dry soil hot by day and cold at night.*** **- These figure captions (fig. 3 -7) should be uniformed - there are time courses of gamma radiation intensity.** **- What was the dynamics of changes in solar activity during the measurement period ? This may be a dominant factor influencing the observed changes of gamma radiation.** **- The registration of gamma radiation was performed at 25 m above the ground. At that height the influence of radon exhalation from ground is weak. Mostly wind speed and direction influence radon concentration and there is no information about those meteorological parameters. This should be completed in the paper. My question about open windows is of course connected with that problem.** **Line: 92-93** ***" ... In Figure 7, the monitoring between the times of ..."*** **should be: "In Figure 7, the gamma radiation intensity between the times of ....".** **- What does *"high pressure in the region with very dry soil"* mean - please, give some numerical data.** **Line 110-112:** ***"...In 2017, the region of So José dos Campos, SP, Brazil was severely punished by one of the longest droughts ever, due to climate change. There were many occurrences of large fires causing damage to agriculture, fauna and local flora. The net of rain statistic for the period is 170 mmr, due to climate change."*** **- This information is not connected with the paper subject. Why do the authors give it ?** **4. Conclusion** **The conclusions are completely incomprehensible ! This chapter must be changed and improved.**	

	The authors write *"the intensity of neutrons was also measured every minute."* Is it a misprint ? and the authors mean "gamma radiation intensity" ? This is in Fig.3 ! ***"...This oscillation is caused by the exhalation of radon gas (Rn-222) during the local solar zenith. The alpha particles of local terrestrial surface generating the measured neutrons."*** **- This conclusion is absolutely unjustified (of course, not neutrons but gamma radiation). It is necessary to give data about radon exhalation from ground at the measurement site. Radon exhalation is a very complex process, dependent on many factors, including meteorology. If the measurements are carried out at 25 m height, you should take into account also large-scale processes of air mass movements.**	
Minor REVISION comments		
Optional/General comments	**The paper may be reconsidered for publication after major improvements are made.**	

Reviewer Details:

Name:	***Krzysztof Kozak***
Department, University & Country	***Institute of Nuclear Physics Polish Academy of Sciences, Poland***