Overall, the paper presents interesting findings. However, a more detailed description of the physical processes leading to eg the gradient in GCR flux would improve the scientific content significantly.

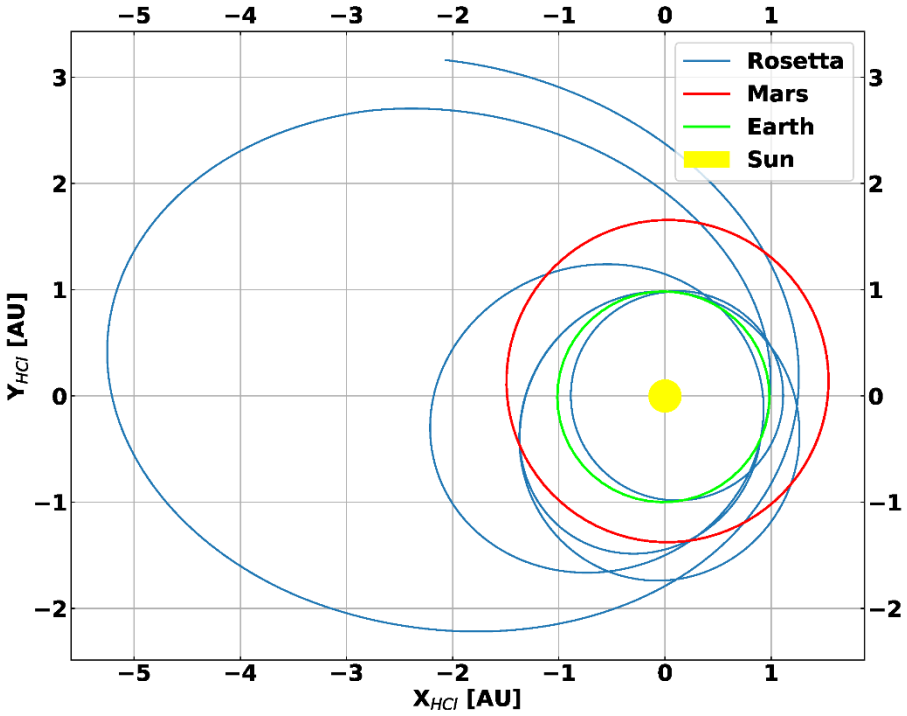
We thank Charlotte Goetz for her feedback.

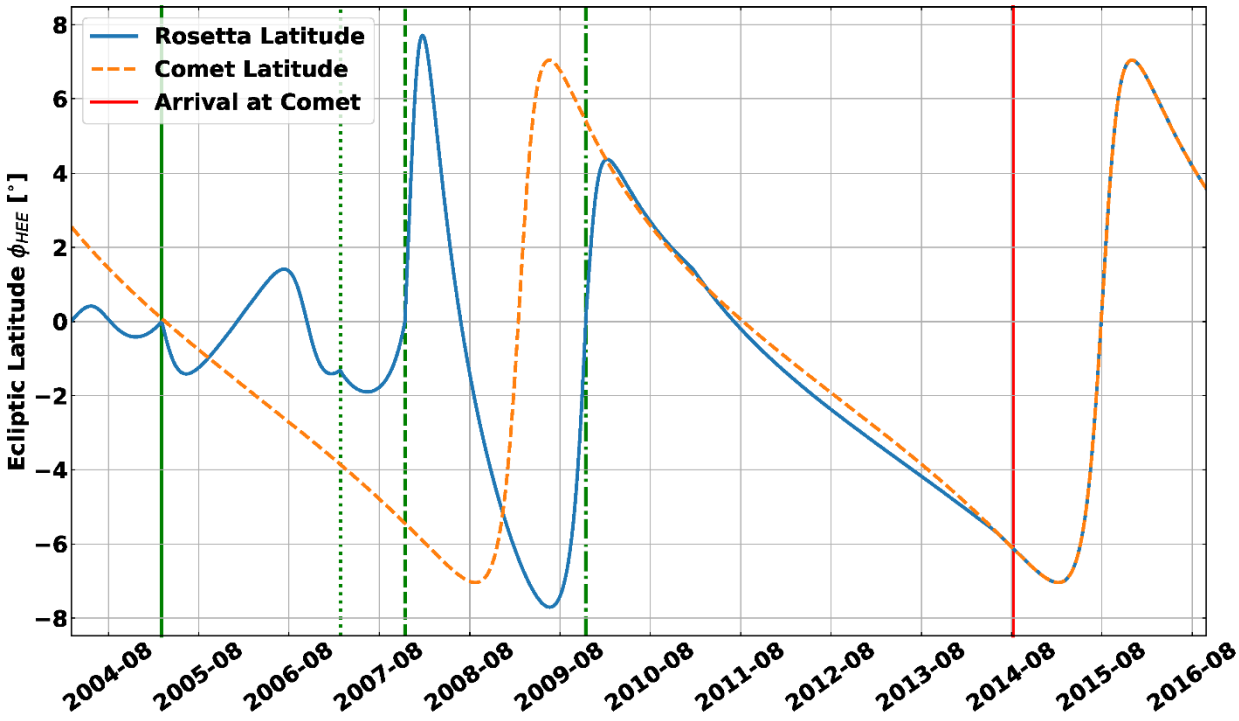
We plan to update the introduction in the revised article. The following the sentence "The variation of GCRs as a function of different factors (solar cycle, heliocentric distance, solar wind conditions) is an interesting topic to explore, and lead to a better understanding of the heliosphere"is replaced by:

"The variation in galactic cosmic rays intensity depends on different physical processes: inward diffusion in the interplanetary magnetic field, adiabatic cooling, outward convection and deceleration in the solar wind plasma, drift along the heliospheric current sheet, and interaction with magnetic structures in shocks and in interplanetary coronal mass ejections (e.g. McKibben; Potgieter, 2013; Morral 2013; Alania et al., 2014; Kozai et al. 2014; Giseler and Heber 2016). The GCR intensity is therefore varying with the solar wind velocity, the magnitude of the interplanetary magnetic field, solar activity, the heliospheric current sheet tilt angle, and the solar polarity change."

Figure 1a: the green and blue are hard to distinguish, maybe another color combination would be better here.

The figure was updated. See below.



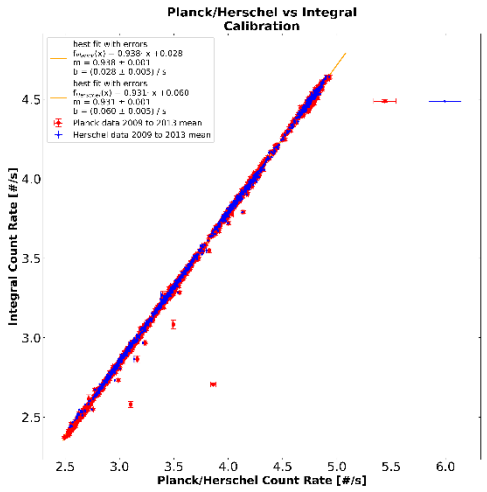


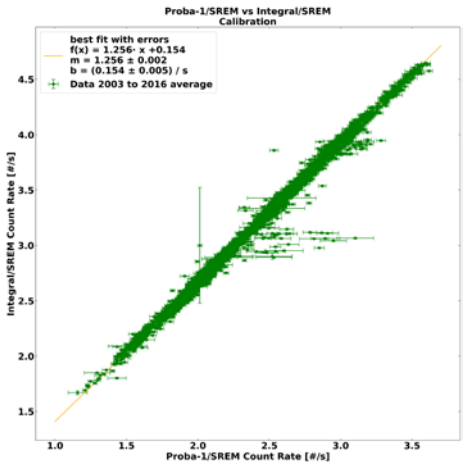
1. It is unclear to me why the instruments need cross-calibration. What are the technical reasons for the instruments different behaviour if they are essentially the same model? You mention sensitivity area, can you elaborate further? Do you have any reason to believe that the dependence of the countrate of two instruments is linear? Could it also be something else? (second or third order?)

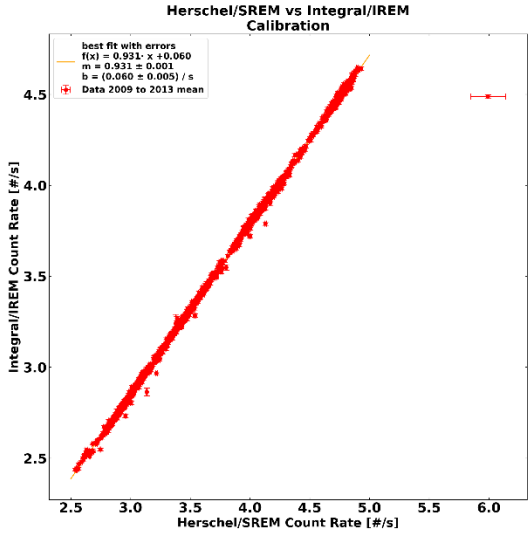
Even if the radiation monitors are of the same design, they are not identical copies. It is therefore reasonable to assume that they will have similar performances, but not equal. In fact, the purpose of the cross-calibration is:

a) *Show that the radiation monitor family behave similarly. This is a good engineering achievement, useful to report.*
b) *The response of a particle detector also depends on the radiation environment it is exposed to. In this case, SREM detectors are mounted on/within spacecraft, which may generate secondary particles that modify the radiation environment at the detector to be different from that in deep space. Therefore, the instrument cross-calibration would help to reduce the related uncertainties.*
c) *Normalise the count rate in case quantitative cross-mission studies are performed, like in the present article.*

In the article, we do not elaborate further regarding the linearity of the calibration. Second or higher orders are always possible, but looking at the behaviour (like see the plots below for Herschel, Planck, INTEGRAL and Proba-1 monitors), a linear fit appears to us very reasonable to consider.







2. p7l3: the equation given here is not consistent with what is shown in Figure 2. From figure two the relationship should actually be: Count(Integral)=1.028 x count(Rosetta) -0.127 . Then all the other calibration functions should also be checked.

The relationship is correct: Integral = 1.028 Rosetta – 0.12. The text was corrected.

3. p11l21ff: The correlation is very obvious. You say this is something that was expected and address this briefly in the annex. I think it would be better suited here and needs to be explained in more scientific detail.

Page 12, we add the following sentence: "This anticorrelation is due to the modulation of GCR intensity. The GCR intensity decreases when the magnetic field and the solar activity increase due to the GCR diffusion in the solar wind. This "engineering" data is a new data set that can be useful to study this modulation.", after "In addition, the expected anticorrelation between GCR and IMF and Sun spot number was calculated and the result can be found in Annex 1."

4. p12l11ff: Again, a physical explanation of why this gradient is expected would be good.

This was added. It is here only a question of heliocentric distance. GCRs propagate in the solar system, and their flux decrease with the solar distance, due to the increasing strength of the magnetic field.

New sentence: This positive gradient is mainly due to the inward diffusion of GCRs in an interplanetary magnetic field whose strength decreases with heliocentric distance.

5. p15l22: However, they ARE highly.....
6. p15l31: demonstrate –> demonstrated

Corrected.