

Dear members of 8th INTEGRAL Workshop "The Restless Gamma-ray Universe" Local Organizing Committee.

Please find enclosed the revised version of our contribution along with our answers to the questions raised by the referee. We thank the unknown referee for his comments and hope that current version of the text is suitable for publication.

Kind regards,  
Maria Chernyakova.

>Comments

>Page 4, 2 lines from top, second paragraph "few hundred years", Reid et al. measured the distance between Sgr B2 and Sgr A\* This new and better measurements constrains the flare to have occurred around 100 years ago.

>13 lines from bottom. Several other Molecular Clouds with variable light curves have been observed with XMM (Ponti et al. 2011) Does the model proposed agrees with these newer measurements as well?

>General question: the model presented is in agreement with the presence, a few parsecs away from Sgr, A\*, of 2 massive molecular clouds (Coil et al. 2000) which show no Fe K line emission at 6.4 keV. Therefore one should not expect hard X-Ray emission. A short discussion is in order.

We are grateful to the referee for this comment and modified the text including the new references. However we would like to stress that within our model X-rays and gamma-rays have very different origin, and that while the variability of the X-rays from molecular clouds give us an evidence of the history of the central source, the observed emission at GeV and TeV energies originates from the protons ejected at different time, and thus no one-to-one comparison is possible.

>Some minor changes suggested.

>Abstract:

>Line 5 from top, "inflect" = to change the form of ... by inflection. Webster's Dictionary of the English language. If anything is the spectrum which is inflected, not the source. Please correct accordingly

We changed the sentence in a following way:

“we show that the spectrum of the central gamma-ray source is flat at both low and high energies with a relatively steep spectral region inbetween.”

>Line 8 from top, "instatiates" this word does not exist please find an appropriate one.

We changed the sentence in a following way:

“We show that a model considering a transition from diffusive propagation of the CR protons at low energy to almost rectilinear propagation at high energies can well explain the spectral phenomenology.”

>Text: Page 2 line 6 of second paragraph: TS, please specify

We changed the sentence in a following way:

“Significance maps based on the maximum likelihood test statistic (so-called TS maps) of the central part of the Galaxy center as seen by Fermi are shown in Figure 1”.