

## Comparison of cosmic noise intensity between Brazilian geomagnetic anomaly region and surrounding region.

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We are operating imaging riometer at 4 stations including Brazilian geomagnetic anomaly region, Concepcion, Punta Arenas in the Southern America and Kakioka, Japan.

Recently, we also installed same 1ch. riometer at 4 stations in order to compare the intensity of cosmic noise. We found that the intensity of cosmic noise at Brazil is about two times larger than other stations.

We show one example of observation results.

Maximum and minimum values of one day variation for 38.2MHz cosmic noise intensity at 4 stations.

Max. Min.

Brazil 8.6V 7.8V

Concepcion 3.5V 1.2V

Punta Arenas 4.1V 3.0V

Kakioka 0.7V 0.2V

We have 4 ideas to explain the differences.

(1) Different of riometer Receiver

We adjusted 4 receivers including amplifier, band width and off set. So it seems difficult to attribute to the difference of receiver at 4 stations.

(2) Cosmic noise intensity depends on different position and also season.

The location of Brazilian observatory is 29.6S. Concepcion is 37.5S, Punta Arenas is 53.1S and Kakioka is 36.2N. 4 stations are

different each others. However, intensity of Concepcion, Punta Arenas and Kakioka are not so large as compared with Brazil. Intensity of cosmic noise at Brazil is especially large. So, it seems difficult to explain this different by observation position.

(3) Different of background noise level.

The artificial noise is weak around Brazilian observatory. However, several instruments are working at observatory and they must emit any noise. It is difficult to estimate the effect of this noise to riometer. We try to remove the noise of instruments and others.

(4) Unique characteristics of geomagnetic anomaly region.

Precipitating high energy particles must emit short waves. If such emissions are really occurred, the intensity of cosmic noise becomes high under the geomagnetic anomaly region.

At present, we cannot explain these phenomena yet. We are planning to install one more 1ch. riometer at Trelew, Argentina(43S) and also measure the intensity of 38.2MHz at 5 stations by using portable riometer