

## ***Interactive comment on “The Magnetic Observatory on Tatuoca, Belém, Brazil: History and Recent Developments” by Achim Morschhauser et al.***

**Anonymous Referee #2**

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The article “The Magnetic Observatory on Tatuoca, Belém, Brazil: History and Recent Developments” presents a complete history of the Tatuoca magnetic observatory near Belem (Brazil) and illustrates its recent modernisation. This effort enables this observatory to fulfil the standard required for an INTERMAGNET observatory. The location of this observatory is particularly important, since it is located below the equatorial electrojet that is flowing in the ionosphere at the magnetic dip equator. Only a couple of INTERMAGNET magnetic observatories are currently located below the electrojet. Additionally Tatuoca is located within the South Atlantic Magnetic Anomaly, a region where the main field of the Earth changes rapidly. It is therefore of very high scientific importance to have high quality observatories in this region. The paper is informative,

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well written and rich of details. In particular the discussion about the challenges of the absolute measurements near the magnetic equator is very useful. I recommend it for publication with very minor corrections.

Page 1, line 13: I did not understand the reference (195, 1955). Since that article was published on JGR under “Notes”, I think it should be cited as (AGU, 1955).

Page 1, line 15: the observatory of Kourou was installed in 1995, definitive data are available starting 1/1/1996.

Page 3, line 7: if I’m not wrong, the start of the operations of Tatuoca observatory is related to the activities of the International Geophysical Year. I suggest to add some information on this point, for instance it is in the list presented in the Annals of the International Geophysical Year volume VIII, Geographical Distribution of the International Geophysical Year Stations, eds. M. Nicolet and P. Doyen, 1969.

Page 4, lines 2-3: I suggest to use the past tense to describe the instruments that are not anymore present in the variometer house. This will help avoiding confusions between what was the instrumentation before and after the upgrades.

Page 4, line 7: also in the case of the EDA fluxgate installed on the theodolite, I suggest to use the past tense.

Page 5, line 6: remove an unnecessary “and” in the sentence, to make it clear.

Page 8, line 12: is the continuous transmission to a remote server a real-time stream or are the data sent in packets at regular time-intervals?

Page 10, lines 4-10: In the discussion about absolute measurements near the magnetic equator, it would be effective to provide and clear indication on the recommended way to operate when the magnetic equator crosses the observatory: should the operators keep following the routine set of telescope positions, or should they keep care of the instantaneous magnetic field direction to know if the observatory is in the North or South hemisphere?

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Page 10, lines 11-13: is the determination of the geographic North included in the routine of the absolute measurements? If not, I suggest to move this remark elsewhere in the text, since the whole section 5 is devoted to routine absolute measurements.

Page 13, line 24: in the conclusion it is mentioned the need of stabilising the temperature of the sensors electronics, it would have been useful to discuss this point also in the text, when describing the variometer house.

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