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#### **SDI Review Form 1.6**

Journal Name:	Physical Science International Journal
Manuscript Number:	2014_PSIJ_9748
Title of the Manuscript:	Quiet time foF2 variation at Ouagadougou station and comparison with TIEGCM and IRI-2012 predictions for years 1985 and 1990
Type of the Article	

### **General guideline for Peer Review process:**

This journal's peer review policy states that <u>NO</u> manuscript should be rejected only on the basis of '<u>lack of Novelty'</u>, provided the manuscript is scientifically robust and technically sound.

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# PART 1: Review Comments

	Reviewer's comment	<b>Author's comment</b> (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		
Minor REVISION comments		
<b>Optional/General</b> comments	This paper deals with the comparison between theoretical values, carried out from TIEGCM (Thermosphere Ionosphere Electrodynamics General Circulation Model) and IRI-2012 (International Reference Ionosphere), and data on the diurnal variation of F2 layer critical frequency (foF2) in African Equatorial Ionization Anomaly (EIA) region. The comparison is made during solar cycle minimum and maximum phases and under quiet time condition. The data concern solar cycle 22 foF2 data of Ouagadougou station (Lat: 12.4° N; Long: 358.5°E, dip: 1.43° for 2013) provided by Télécom Bretagne. The study is made	

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on the one hand under geomagnetic quiet time
conditions determined by daily Aa inferior or
equal to 20 nT and on the other hand during solar
cycle maximum and minimum phases given by
sunspot number Rz superior to 100 and Rz inferior
to 20, respectively. The seasons are taken into
account by considering December as winter
month, March as spring month, June as summer
month and September as autumn month. The
seasonal Hourly quiet time foF2 is given by the
arithmetic mean values of the five quietest day
hourly values.
The most important new results are the
establishment of following facts. The trough
located between 1000 LT and 1400 LT due to the
effect of ExB is not well reproduced by the
models. At nighttime (after around 1900 LT-2000
LT) till before sunrise, models show bad
predictions may be due to the non-integration of
the all electrodynamics mechanisms of this layer
in the sector. The IRI-2012 better models data than
the TIEGCM in this sector. Models predictions are
better during solar maximum than during solar
minimum and strongly dependent to pre-sunrise
and post sunset periods. The models' predictions
show that they do not well express all the dynamic
process in the African sector. Therefore, for this
sector they must be revisited for improving.
The paper is well structured in introduction,
description of the available data, presentation of





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the results obtained, and references cited are relevan paper is quite well writt manuscript is rigorous and contribution to its area of r native English speaker, my standard of English in the pre In my opinion, the pape publication.	onclusions. All the and adequate. The a and clear. This provides a useful earch. Being not a bility to assess the ent paper is limited. is suitable for
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Note: Anonymous Reviewer