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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 **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (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)
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments		
<u>Optional/General</u> 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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	<p>the results obtained, and conclusions. All the references cited are relevant and adequate. The paper is quite well written and clear. This manuscript is rigorous and provides a useful contribution to its area of research. Being not a native English speaker, my ability to assess the standard of English in the present paper is limited.</p> <p>In my opinion, the paper is suitable for publication.</p>	
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