Review of "Validation of TANSO-FTS/GOSAT XCO_2 and XCH_4 glint mode retrievals using TCCON data from near-ocean sites" by M. Zhou et al.

General comments:
This paper describes an intercomparison of the GOSAT XCO_2 and XCH_4 retrievals from NIES v02.21, SRFP v2.3.5, SRPR v2.3.5, and ACOS v3.5 algorithms with FTIR measurements in five TCCON stations. In particular, the authors focus on the validation of the GOSAT sun glint data over ocean. This is an interesting subject, and the writing is clear. However, I would advise that the manuscript be revised thoroughly before publication. Specific suggestions and comments are given below.

Major comments:
[1] p10905, line18: "The co-location area is finally set as ±5° latitude ±15° longitude around each TCCON site. Within this co-location box, we do not detect any significant latitude or longitude dependent bias for XCO_2 and XCH_4."
Previous studies have validated the GOSAT data retrieved within ±2° latitude/longitude box or 5° latitude/longitude radius of respective TCCON sites (e.g., Butz et al., 2011; Yoshida et al., 2013). Please add an explanation why the co-location area was set as ±5° latitude ±15° longitude in this study. I would show the latitudinal and longitudinal variations of GOSAT XCO_2 and XCH_4 in the co-location box quantitatively. Moreover, can the authors compare the validation results in this study to those in previous validation studies over land in Sect. 4 Results?

[2] In this study, relative bias is defined as follows.
p10910, line6: "relative bias = mean(x)×100%"
p10910, line8: "with $x = (X_{TCCON} - X_{SAT})/X_{TCCON}$"
I think that the bias should be shown as "GOSAT data minus TCCON data" (not "TCCON data minus GOSAT data") because the aim of this paper is to validate GOSAT data.

[3] p10913, line23: "4.3 Stability"
I don't understand the meaning of "stability (and stable)" in this section. Does this mean that the mean biases of GOSAT data (or the difference between the three algorithms) are small during whole analysis period (2009-2013)? Please specify it. Though the authors showed annual mean biases of GOSAT glint data (XCO_2 and XCH_4) over ocean relative to TCCON data (Figs. 8), it is difficult for me to see temporal behaviors of the GOSAT biases. Can the authors comment on the possibility of the temporal behaviors (trend and seasonality) of the GOSAT biases over ocean, and the difference between ocean and land?

Other minor revisions:

[a] p10899, line3: “The” ---> “the”

[b] p10902, line3: “For this paper, we have selected XCO_2 and XCH_4 products from the NIES v02.21, SRON/KIT v2.3.5 and ACOS v3.5 algorithms (see Table 1) with a good quality flag.”

Please add an explanation how the authors have selected the GOSAT data.

[c] p10903, line12: “Spurr et al., 2006”

Spurr et al. (2001) in References

[d] p10903, line21: “have been applied bias correction” ---> “have applied bias correction”?

[e] p10904, line3: “(Yang 2002)” ---> “(Yang, 2002)”

[f] p10904, line11: “Dohe et al. (2012)”

Dohe et al. (2013) in References

[g] p10905, line12: “mid-Tropospheric” ---> “mid-tropospheric”

[h] p10906, line16: “CO_2 profile” ---> “CO_2 profiles”

[i] p10906, line23: “Meirink et al., 2006”

This is not listed in References.

[j] p10907, line24 to p10909, line8:

Please replace “P1 (or P2)” including Eqs. (3) and (7) by “P_1 (or P_2)”.

[k] p10908, line13: ”we use the ECMWF interim reanalysis specific humidity (SH)”

I would add the detailed information and reference of the ECMWF data used.

[l] p10910, line9: “XTCCON(SAT)” ---> “$X_{TCCON(SAT)}$”

[m] p10917, line8: Crisp et al. (2004) is not cited in text.

[n] p10922, line20: “Network” ---> “Network’s”

[o] p10922, line28: Yokota et al. (2009) is not cited in text.