Comment on essd-2022-27
Anonymous Referee #1


It is well known that the quality of commonly used AQUA MODIS global fire products inevitably decrease gradually after a long-term running. It is very glad to see that Chen et al. made a robust global fire products with similar spatiotemporal resolution to AQUA MODIS products, which guarantees the continuity of research based on MODIS data. Overall, this manuscript is well-structured and presents sufficient details. The verification of FY-3D fire product was conducted from different perspectives. The figures were presented with good quality. Nevertheless, the following several technique issues can be considered by the authors before I recommend its final acceptance for publication in ESSD:

1 What is the major difference between the algorithm of fire identification for FY-3D and MODIS fire products? Although briefly introduced, more detailed explanation should be added. This can give readers and users a better picture of the quality and advantage of FY-3D fire products.

2 There is a difference of observation time between FY-3D and MODIS fire products. Will this cause potential errors when employing both FY-3D and MODIS products? e.g. the first part of time series based on MODIS product and the latter part based on FY-3D products?

3 There are two middle-infrared band (3.8um and 4.05um). What is the difference between the two bands? And what is major advantage (e.g. detecting specific fires?) for the two bands? What is the band used for FY-3D fire products?

4 The position accuracy for FY-3D and MODIS fire products were both 0.01°. Why the range for matching them was set as 0.02°?
5. On page 16, the equation for position matching suggested 0.03$\degree$, why in the text was 0.02$\degree$? Is it a typo or something to explain?

6. Page 1 Line 36: Wild fires can significantly affected the formation of cloud and precipitation, which can be mentioned as well. The authors can refer to the following literatures: (a) doi: 10.1029/2021GL094224; (b) doi: 10.1029/2019JD032136

7. Page 1 Line 36: Some important references can be added to better support “remarkably deteriorated air quality”, such as http://dx.doi.org/10.1080/01431161.2010.485213