The authors presented a method to generate a global FAPAR product at 250 m by exploiting MODIS surface reflectance data and deep learning model. The generated product is extremely interesting and useful. The validation analysis demonstrates the quality of the obtained product.

However, I have some comments to make to the authors:

1. The reasoning for choosing the bi-LSTM method is not clear. Currently, deep learning models with transformer have outperformed LSTMs when working with both short and long time series of data.

Response: Thanks very much for your comments and suggestions. In our previous work in generating the GLASS new version LAI, we have demonstrated that the Bi-LSTM model outperforms the general regression neural network (GRNN), LSTM, gated recurrent unit (GRU) in learning the temporal relationship between satellite surface reflectance and vegetation variable. We agree transformer with attention mechanism is a more state-of-the-art deep learning system than LSTM and GRU, however, to keep consistent with the GLASS LAI product, we applied the same strategy and deep learning model in producing the GLASS 250-m FAPAR product from MODIS data. We have added more information on this in Introduction (line 85).

2. It would be interesting to have more images like Figure 8 to really see (also qualitatively) the product obtained compared to the existing one.

Response: We appreciated this suggestion and added two more regions for intercomparison in Fig. 8.

3. The authors stated that the obtained product has better spatiotemporal consistency. It would be nice to have figures showing how the FAPAR changes spatially for sequential instances of the time series (e.g., to see the FAPAR generated at time t1, t2, t3 and so on).

Response: Thanks for this valuable suggestion. We have added GLASS V6 250-m time-series FAPARs at one 1°×1° region in Southwest China in 2021 in Fig. 11 to show its spatiotemporal consistency.

4. What is the computational burden required to generate a new FAPAR product on a global scale once new MODIS surface reflectance data are available?

Response: We will update the GLASS FAPAR products yearly. As we stated in section 3.3, it takes about 48 h for calculating global tiles of three years using a single GPU. When new MODIS reflectance data are available, we will first update the GLASS 250m LAI, then GLASS FAPAR data. Therefore, the computational efficiency of Bi-LSTM is quite an advantage compared to the traditional algorithms.