A big thanks to the authors for the thorough revisions. I think the paper is basically ready to be accepted, but a few things may need to be clarified.

1) The new analysis on sub-seasonal correlations among tmax, sm, and aet are very interesting and add a lot to the paper, so thanks to the authors for doing this. I think the method could be clarified: I'm not totally clear what 'monthly correlations' means. I'm pretty sure it is interannual correlation between pairs of variables for a given month of the year, repeated over the various months. If so, this is a reasonably fair way to quantify these couplings, but the method should be clarified, and the rationale expanded a bit (and/or simply cite Seneviratne et al. 2010). Also, does this calculation incorporate data from all the counties into the correlation?
2) I don't quite follow the claim based on Fig 4 on line 330 that soybean in the south is particularly sensitive to combined high summer temperature and low fall moisture. While the spatial pattern you describe is generally right, many counties are different between those two maps. Also, the combination of positive fall soil moisture coefficients and negative summer temperature coefficients doesn't necessarily mean 'compound impacts' – these could be just independent sensitivities. Further, the signal could be driven by different years in the regression model – i.e. dry falls some years driving the coefficient negative, hot summers in other driving that coefficient negative. I think it would be stronger to refer to Fig. A3, as significant interactions terms are more direct support for this 'compounding' effect, and a better link into Fig. 5 which really shows this compounding in detail (based on interaction terms).
3) Fig. 4 caption is a bit confusing. The interaction coefficients are shown in Fig. A3, right, but not here? So perhaps drop the last sentence. And could explain more which among the variables in Fig. 3a are being shown in – e.g. for temperature-related, this is *either* Tmax or Tmin, depending on which one dominates in a given county, right? And could refer to Figs A1-2 to help reader find these.

A couple other interesting things you could include:

One point that to me supports and ties in the new coupling analysis is that, in the updated results, there is a sharp boundary between positive and negative yield impact of mid-season temperature variables, and this boundary (somewhere in the middle of Iowa) seems curiously close to the transition from energy- to moisture-limited summer soil moisture regime in North America (see Seneviratne et al. 2010). You could mention that as it supports part of your interpretation of Figure 7. In my own work I also find a global pattern consistent with this (stronger T-ET coupling worsens yield sensitivity to temperature for soybean) in the paper I mentioned during my first review (which is out now by the way, Lesk et al. 2021)

The August Tmax – Sept. Tmin interaction is also very interesting and indeed may be enhanced sensitivity to cold from heat acclimation in the early season. You could expand on what physiologically might cause this (not so obvious, at least to me).

References:

Seneviratne, S. I., Corti, T., Davin, E. L., Hirschi, M., Jaeger, E. B., Lehner, I., ... & Teuling, A. J. (2010). Investigating soil moisture–climate interactions in a changing climate: A review. *Earth-Science Reviews*, *99*(3-4), 125-161.

Lesk, C., Coffel, E., Winter, J., Ray, D., Zscheischler, J., Seneviratne, S. I., & Horton, R. (2021). Stronger temperature–moisture couplings exacerbate the impact of climate warming on global crop yields. *Nature Food*, *2*(9), 683-691.