The manuscript by Sparks and colleagues examined how forest composition and fire intensity affected forest net primary productivity (NPP) following fire. The authors argue that higher fire intensity leads to progressively larger reduction in post-fire NPP among fire resistant and mixed-resistance communities, while fire intensity had little effect on the magnitude of NPP change in fire susceptible communities. The manuscript is well written and presents an analysis that provides novel insight into forest carbon dynamics following fire in a region where fire activity is likely to intensify over the coming century due to regional warming and drying. As detailed below, it seems there are several aspects of this analysis could be refined to further improve its rigor.

Primary comments

1. The manuscript states that, "Fire-affected pixels were grouped by FRP and FRE percentile classes (0-25, 25-50,…) for each fire" and then changes in post-fire NPP were evaluated among these percentile classes across all fires within a forest type. Why group pixels by fire-specific percentile class rather than by the absolute magnitude of fire intensity? Perhaps I am misunderstanding the approach, but let's say there are two fires of contrasting intensity, both of which occur in a fire-susceptible forest type. In this forest type, about 50% of pixels had FRE < 2000 MJ km^{-2} and about 50% of pixels had FRE between 2000 and 12000 MJ km^{-2} (figure 2). If the low-intensity fire only experienced FRE < 2000 MJ km^{-2} and the high intensity fire only experienced FRE > 2000 MJ km^{-2}, then what happens when the pixels within each fire are grouped by the fire-specific percentile class and then these classes are subsequently grouped across fires? The 75-100th percentile class for the low severity fire might have FRE of, say, 1000-2000 MJ km^{-2}, whereas this same percentile class for the high severity fire might encompass areas where the FRE was > 10,000 MJ km^{-2}. You might expect a very different post-fire trajectory of NPP between these two fires for the same percentile class, but at present these would get grouped together, correct? This might somewhat explain why you don't see any difference between percentile classes in post-fire NPP trajectory for the fire-susceptible forest type.
2. The description of the statistical analysis is vague and the results do not present any statistics. Also, how do account for taking multiple pixels from the same fire and using them as independent samples, when in fact they are not independent?

Secondary comments

1. The researchers frequently note that there are dose-response relationships between fire intensity and post-fire changes in NPP. Given this focus, it would be worth including a figure that more explicitly shows this relationship. The figure could show the change in NPP one year after fire as a function of fire intensity for each of the three forest types.
2. Could it be that fire intensity is higher in fire-susceptible forests than mixed or fire-resistant forests not solely because of differences in trait characteristics, but rather because there is more biomass (fuel) in these forests? It could be worth normalizing fire intensity by forest biomass to see whether fire intensity per unit of fuel differs between these three broad forest types. The National Biomass and Carbon Data set 2000 (NBCD2000) could be a useful source of information for this endeavor (https://daac.ornl.gov/cgi-bin/dsviewer.pl?ds_id=1161)

3. The manuscript includes figures showing the relative change in NPP following fire, but not the absolute change in NPP. It would be informative to show how the absolute magnitude of NPP changes after fire.
4. Does including the FRP_{90th} percentile add to the story? It seems somewhat redundant given the inclusion of FRP_{peak} and FRP_{mean}.

Line specific comments

1. Page 4, line 31: What does "Unburned pixels (*n*unburned = *n*FRP percentile group)…" mean? Does this mean that you selected the same number of unburned pixels as there were pixels in the percentile group?
2. Page 5, lines 14-25: The researchers present the average and variation (presumably SD, but not defined) in fire intensity metrics for each forest type; however, Figure 2 shows that these metrics are very non-normally distributed. Consequently, mean and standard deviation are not appropriate summary statistics. The median and interquartile range would be more appropriate.
3. Page 5, lines 29-30: the researchers state that, "in forests dominated by fire-resistant species, there was a stronger dose-response pattern for relative NPP grouped by FRE percentile class rather than FRP percentile class." This pattern is not particularly evident looking at figure 3. I would suggest providing additional evidence, or removing the statement.
4. Page 6, line 4: "The dose-response relationship was much weaker in forests dominated by fire susceptible species. There were few differences between percentile classes with only the highest FRE percentile class displaying lower relative NPP compared with other percentile classes." Is this based on a qualitative comparison, or statistical analysis?
5. Page 6, line 14: The authors state that "generally, recovery trajectories [in NPP] were linear for all fire-resistant groups, except for a few fires were NPP begin decrease again around 2011." Looking at the supplemental figures, it appears that many, if not most, of the fires show non-linear changes in NPP after fire.
6. Page 7, lines 19-21: The authors note that the number of MODIS FRP observation differed between "fires with a clear this up – response relationship" and those with a "weak relationship." Does this suggest that there were differences in the number of MODIS FRP observations between forest types? Perhaps clarify what is meant by a clear relationship versus a weak relationship.
7. Page 8, Conceptual framework: The following citations could bolster this section:
    i. Michaletz, S. T., E. Johnson, and M. Tyree. 2012. Moving beyond the cambium necrosis
        1. hypothesis of post-fire tree mortality: cavitation and deformation of xylem in forest fires. New Phytologist **194**:254-263.
    ii. van Mantgem, P. J., J. C. Nesmith, M. Keifer, E. E. Knapp, A. Flint, and L. Flint. 2013.
        1. Climatic stress increases forest fire severity across the western United States. Ecology Letters **16**:1151-1156.
8. Page 8, line 22: Always hesitant to say things are "obvious" in a paper.
9. Supplemental figures: The Saddle fire appears to be missing the vertical line denoting the year in which the fire occurred. Also, what do the plotting characters and error represent in these figures? Mean and standard deviation?