

**General Comment:**

While high-resolution and high-spatial-accuracy fire perimeter datasets are crucial for studying fire regimes, this manuscript does not demonstrate good writing quality. There are several structural and methodological issues that need to be addressed to improve clarity, rigor, and scientific contribution.

**Major Comments****1. Manuscript Structure**

The current organization of the manuscript is not well structured, which makes it difficult to follow. I recommend adopting a more conventional scientific structure to improve clarity and readability, such as: Introduction – Data and Methods – Results – Discussion – Conclusion.

**2. Introduction**

The Introduction is overly broad and somewhat verbose. It includes substantial discussion of topics (e.g., manual methods and various fire products) that are not directly relevant to this study. Additionally:

- Existing fire products are listed without clearly explaining their relevance or connection to the present work.
- The manuscript does not clearly identify a specific knowledge gap or methodological gap.
- The advantages of fire perimeter datasets relative to burned area or active fire products are not sufficiently articulated.
- Limitations of existing approaches (e.g., converting active fire detections to burned area or fire perimeters) are not clearly discussed.

Overall, the Introduction would benefit from a more focused literature review and clearer positioning of the study within existing research. For example, relevant work such as *Giglio et al. (2006)* should be discussed to contextualize the contribution.

**3. Satellite Wildfire Measurements**

This section is also overly long and could be streamlined. Since the method is primarily based on VIIRS 375 m data:

- Discussion of other products (e.g., MODIS) should either be minimized or moved to supplementary materials.
- Instead of detailed descriptions, it would be sufficient to cite existing literature comparing MODIS and VIIRS fire products.
- I recommend merging this section with the subsequent one into a unified “Data and Methods” section.

#### 4. Methodology

- Section 3.1: The inclusion of “motivation” in this section is inappropriate; it should be moved to the Introduction.
- Section 3.2: This section is too brief to stand alone, and the description of preprocessing steps lacks sufficient detail.

Additional concerns:

- Restricting the analysis to nominal and high-confidence pixels may lead to omission of important fire types (e.g., peatland fires).
- The methods are presented largely as an operational workflow, with limited explanation of innovation, justification, or methodological advancement.
- The calculation of the centroid (an output of CONFEX) is not described. It is unclear whether this refers to a geometric centroid or another definition. The relevance of this variable is also not sufficiently justified.
- More informative outputs—such as initial ignition points, fire spread dynamics, or temporal progression—could significantly enhance the dataset’s value.

Regarding evaluation:

- The manuscript uses burned area products for validation but does not clearly explain the relationship and differences between burned area and fire perimeter datasets.
- It is unclear whether the fire perimeter product is intended as a substitute for burned area. If so, the novelty relative to studies such as *Giglio et al. (2006)* should be more explicitly emphasized.

#### 5. Data Characteristics and Discussion

This section should be reorganized for clarity:

- Separate into two sections: Results and Discussion.
- Suggested structure:
  - Section 4.1: Content currently in lines 324–357
  - Section 4.2: “Alaska Fire Dynamics”
  - Discussion: “Dataset Limitations” and broader interpretation

Additionally, the Discussion section needs substantial expansion, including:

- Clear articulation of the study’s advances relative to existing work
- Implications and potential applications of the dataset

#### 6. Data Availability

The Data Availability section should be moved to follow the Conclusion.

#### Minor Comments

- Figure 1: This appears to function as a table rather than a figure. I recommend converting it to Table 1.