

This manuscript presents the CONUS Fire EXtent (CONFEX) dataset, a VIIRS-based wildfire event product (2012–2024) that derives fire perimeters, ignition locations, and temporal attributes using a spatio-temporal clustering framework. The dataset addresses an important gap between hotspot-based detections and perimeter-based inventories, offering higher temporal resolution and event-level characterization. The methodology is generally well described and technically sound, and the dataset has clear potential value for fire regime analysis, ignition modeling, and risk assessment. However, several issues related to spatial interpretability, validation, and uncertainty need to be addressed before publication. Hence, the reviewer recommended a major revision with comments attached:

Major comments:

1. All figures throughout the manuscript lack latitude/longitude grids or coordinate ticks, making it difficult to identify the geographic location of the presented results. For a geospatial data paper, this significantly limits its interpretability, reproducibility, and usability by the community.
2. The methodology is technically sound but not well written and at times difficult to follow. The section lacks a clear structure and mixes conceptual explanations, implementation details, and justification within the same paragraphs, which reduces readability. Moreover, key steps such as feature construction, clustering, and perimeter reconstruction are not clearly separated, and some explanations (e.g., clustering method comparison) are overly detailed relative to their importance. A clearer, stepwise organization would significantly improve comprehension. I recommend restructuring the methodology into clearer subsections and also performing thorough language editing to improve clarity and readability.
3. The dataset derives fire perimeters from clustered VIIRS detections, but there is no quantitative assessment of positional uncertainty of perimeters, centroid accuracy, and sensitivity of geometry to clustering parameters. Validation is primarily based on F1 scores, which do not fully capture spatial errors.
4. The manuscript reports low performance in the Eastern CONUS, attributed mainly to false positives. However, the discussion does not sufficiently explore underlying causes, such as 1) prevalence of prescribed burns, 2) smaller and fragmented fires, 3) lower fire intensity affecting VIIRS detectability. Please expand discussion linking algorithm assumptions to regional fire regimes.
5. The clustering parameters (distance, time, alpha) are tuned using California 2020 only. This raises concerns about applicability to Eastern CONUS or Alaska. Please discuss parameter transferability and potential regional sensitivity.

Minor:

- Introduction is way too long as a data paper, could be truncated.
- Figure 1 is essentially a table.
- Figures 8-9: labels of (a)-(c..) were missing.
- Clarify distinctions between “event,” “cluster,” and “fire perimeter.”
- Clearly describe dataset structure and availability.

