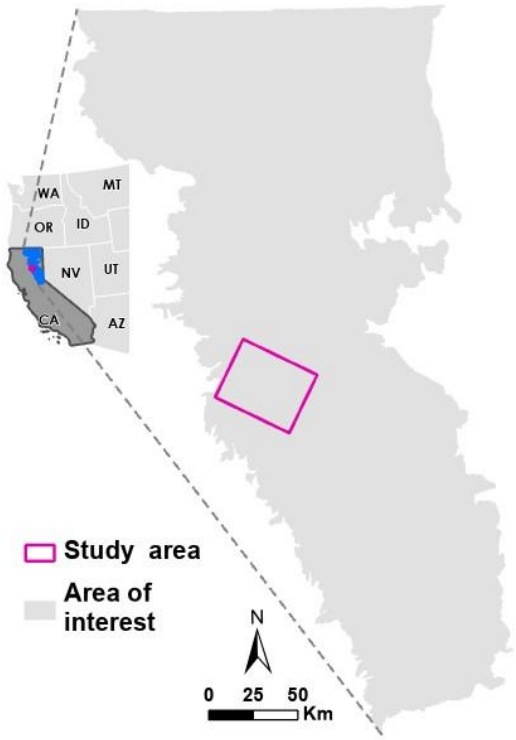
Explanation for the terms and files applied in the code

AOI: Area of interest, this is a larger area and this model consider the fire events occur in this area.

SA: Study area, this is a smaller area that our study focusing on.

Coordinate system applied in this model: **NAD 1983 UTM Zone 10N**



Files applied in this code:

AOI_point.txt - The X and Y coordinate for the area of interest.

SA_point.txt - The X and Y coordinate for the study area.

list_events.txt - A list of fire events, apply to retrieve the file event files.

Fire event files -

All fire events were split into four files for their vertex point:

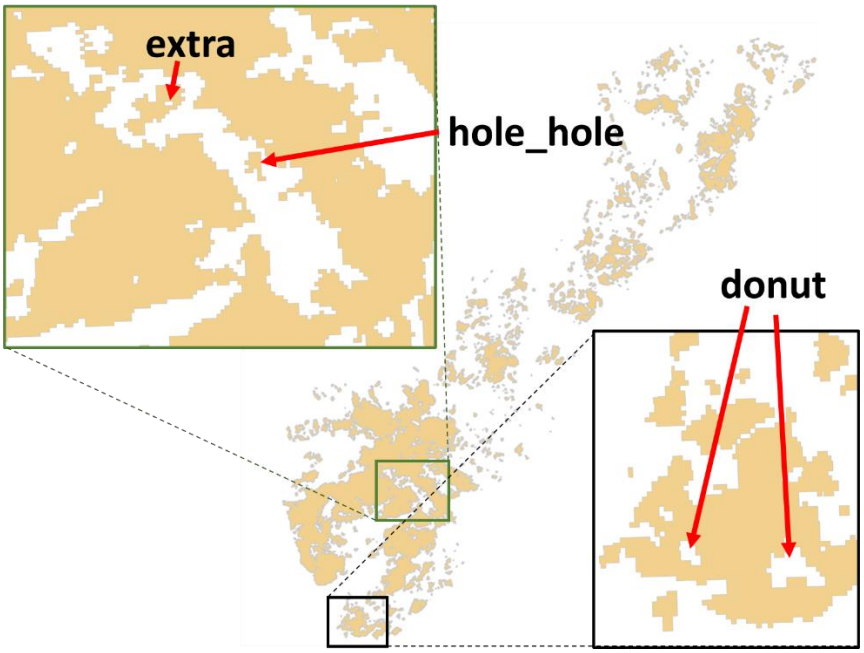
singlefire_1984BADGER_donut	Text Document	2 KB
singlefire_1984BADGER_extra	Text Document	1 KB
singlefire_1984BADGER_hole_hole	Text Document	1 KB
singlefire_1984BADGER_no_hole	Text Document	57 KB

Note that, some of the files are empty, we create them just for the processing.

To categorize the geometric relationships of fire event polygons, we define four types: no_hole, donut, hole_hole, and extra. Each type describes a specific geometric configuration:

- no_hole: This is the outer boundary of the fire event, representing the overall perimeter without any internal voids.
- donut: This refers to an empty area within the no_hole outline, essentially a hole within the main fire event polygon.
- hole_hole: This is a polygon inside the donut, representing an area that is within the hole created by the donut.
- extra: This describes a more complex configuration, where there is a donut inside the hole_hole polygon, creating nested levels of geometry.

Take *2008PIT* for example:



These files are run separately and label with their type and merge into a dataframe for further processes.