



## **Suitability of different Fire Weather Indices for alpine conditions: an extensive evaluation with high resolution data**

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The interpretation and communication of fire danger warning levels based on weather indices values are critical for fire management activities. In the framework of the EU Alpine Space Interreg-project ALP FFIRS (Alpine Forest Fire Warning System) we verified the response of several Fire Weather Indices with respect to the recorded forest fires in the last 10 years.

To this purpose, we first set up a platform for sharing historical series of forest fire and weather data and we then developed a common evaluation technique of the fire weather indices skills on the basis of the following principles: a) to be non-parametric, in order to avoid the potential production of spurious results and b) to distinguish skills of several indices in different seasons and different areas.

Our analysis demonstrates very clearly that there is no perfect index, the best performing one may change according to the region and the season considered. We also hypothesize that a single index may only partially describe the fire danger and a combination of indices may be of great benefit for establishing a suitable a Fire Danger Rating system in the Alpine context.

The study will provide the forest fire suppression services an objective analysis of fire danger systems at the Alpine area scale and contribute to the creation of a common Alpine Forest Fire Danger Scale, even if the regional services will use different fire weather indices.