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How Climate Services can provide the knowledge of the expected surfing days on surf-spots in the Iberian Peninsula

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The practice of surf is extended around the Iberian Peninsula's coast. Surf-spots are the specific nearshore locations where surfing occurs. This coastal sport needs specific environmental conditions to be done. Knowing which is the distribution of surfing days around the Iberian Peninsula is a complex task. This is because good surfing conditions are the result of different climatological, geomorphological and oceanographical variables. Moreover, data collected used to define the distribution of surfing days is registered far away from the shore. Thus, the conditions registered – in the location of the buoys- will change somehow once arrive to the shore where surfers try to perform their best.

Research has explored the advancements of climate services in multiple fields but the determination of frequency of surfing days around the Iberian Peninsula by attributing data from oceanographic buoys to surf-spots was not done before. Atmospheric variability modulates in different temporal scales occurrence and severity of the waves. In this way knowing how the climate works, how the atmosphere exchanges energy with the ocean or how is transferred and how this affects to low pressures and high pressures is fundamental for understanding the conditions for surfing.

In this sense, Climate Services can provide the knowledge of the expected surfing days on surf-spots in the Iberian Peninsula by the methodology created in this study. The aim of this method is to identify the main variables which will make a good day for surfing or not. Into this context is important to know that surfing days are the result of two main factors: the influence of travelling low pressures from the ocean/sea to the specific shore (1) and the local conditions of each specific surf-spot -- thermal winds and beach orientation-- (2). The way of attributing these two factors is using buoys data to know the influence of travelling low pressures from the ocean to the shore by knowing significant wave height in open sea-. Then the form in which are attributed the local conditions is by knowing the specific favourable swell direction needed in each surf-spot and matching the direction of the swell that is registered by the buoys. In this way, it is made an attribution from the buoy data in the open sea to the surf-spots conditions located on the shore. The main results show the distribution of the expected days for surfing in the Iberian Peninsula based on historical data.

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