



Severe windstorms in Croatia in 2015

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The area of Croatia, especially its coastline, is prone to strong wind episodes due to frequent cyclone developments, several cyclone tracks passing through the area and a complex topography with a high mountain chain separating the colder continental from the warm maritime part.

In 2015, two episodes of hurricane force wind caused large damages to the cities and at the coast. The first, on 29-30 January was the case of SE and S wind. During nearly 24 hours the mean wind speed at the stations at the south Adriatic was constantly exceeding 20 m/s with maximum speed reaching 41,6 m/s (~150 km/h) at the station Palagruža at 19:13 local time on 30 January 2015. Hurricane force wind and very high waves (in Dubrovnik the waves were splashing over 40 m high city walls!) caused large material damage at the coast, destroyed many boats, flooded houses... Meteorological and Hydrological Service of Croatia issued red wind warning for Dalmatia in the Metealarm system.

The second red wind warning in 2015 was issued on 4 March 2015 for the 5 and 6 March, when the whole eastern Adriatic coastline experienced one of the strongest Bura (NE wind) that ever occurred! For two days the entire coast was under constant wind with mean wind speed above 20 m/s. At some stations mean wind speed was constantly above 30 m/s for more than 24 hours and the maximum wind speed reached 60.7 m/s (216 km/h). Again, damages were numerous.

In this work, synoptic analyses of the situations causing severe windstorms in Croatia will be given, with the emphasis on NWP model performance and impact mitigation. The frequency and the strength of the windstorms will be discussed in the light of the climate change perspectives.