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Coastal flooding in Rovinj: the case of February 10th 2016.

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In this case we present severe weather event that occurred on February 10th 2016 most affecting the west coast of Istrian peninsula in the northern part of Adriatic sea. The main focus of this study is analysis of conditions favorable for flooding, especially of the city Rovinj and surrounding area due to the massive damage it has suffered from this exceptional intensity event. Coastal flooding phenomenon by sea level rise is commonly associated with low pressure weather systems, the severity of which is affected by the shallowness of the basin and orientation of the coastline relative to the direction of high waves approaching and finally to the timing of tides. Combination of significant sea level rise coinciding with astronomical high tide can be extremely hazardous and we will show that as it was in this case. Movement of surface Low with associated frontal system, thunderstorms proceeding the actual event, but also other mechanisms responsible for flooding, have been analysed through synoptic measurements, satellite and model data.
On the February 10th around midday the highest waves were observed and the highest sea level measured. Automated station nearest to the city of Rovinj showed maximum wind speed from west direction up to 100 km/h and consequently waves with significant wave height over 2.5 m were observed, which means that the highest were over 5 m height.
Destructive power of sea level rise and large battering waves can result in a big threat to life and property along the coast, so the motive for this analysis is better recognition of similar future events in order to reduce coastal hazards.