

## DESTRUCTIVE WAVE IN THE ADRIATIC

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Le 21 juin 1978 on a observé des ondes fortes sur la côte orientale de l'Adriatique moyenne et méridionale. La vitesse des ondes a été de 85 km/h environ, et les périodes de 15 min. Nous pourrions interpréter ce phénomène comme tsunami si nous prenions en considération que quelques heures avant un tremblement de terre fort c'est fait sentir à Thessaloniki dans la mer Egée.

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On June 21<sup>st</sup> 1978, at a number of localities of the Eastern Adriatic coast, unusual wave phenomenon, which lasted for few hours, was noticed. In the harbour Vela Luka on the island of Korčula it caused high damage, and at some other places (Dubrovnik, island of Lastovo, island of Vis) panic among people. The phenomenon was recorded at a number of other localities as well as on the west Adriatic coast at a lower intensity.

As seen from the marigrams, the wave reached Dubrovnik at 4<sup>30</sup> and Split between 7 and 8<sup>h</sup> GMT. In Venice it appeared between 11<sup>30</sup> and 12<sup>h</sup>. From the marigrams available it is not possible to define better the beginning of the phenomenon. Taking into account this reserve, the wave speed in the Adriatic was 85 km/h and the wave period was 15 min.

Taking the average depth of the basin as 100 m, the theoretical wave speed was calculated to be 112 km/h.

Tide gauge	Period min.	Max. height cm	Start hour GMT
Dubrovnik	15	40	4 <sup>30</sup>
Split, harbour	15	45	6 <sup>30</sup>
Split, rt Marjan	15	10	6 <sup>30</sup>
Venezia, platform	16	10	11 <sup>30</sup>
$\varphi = 45^{\circ}18.8'N$			
$\lambda = 12^{\circ}30.9'E$			
Venezia, Lido (Diga Sud)	15	10	11 <sup>30</sup>

On June 20<sup>th</sup> near Thessalonike (lake Volve) in the Aegean Sea, a strong earthquake (6.5 Richter scale) was registered (at 20.05<sup>h</sup> GMT). Most probably both events are connected, and the tsunami wave traveled all the way to the Adriatic. If that was the case, the wave speed from the Aegean to the Central Adriatic Sea was cca 200 km/h. The calm weather would favour the travelling of the wave. From June 20 (afternoon) until 21 (morning) the Aegean, Ionian and Adriatic sea were covered by nongradient pressure field. In the whole region there was no wind or it was very weak.

Waves were more pronounced in the basins having free oscillation (seiche) of cca 15 min. It is best seen in Split. In the Split harbour (bay) the maximum wave height was 45 cm. The seiche of this basin, as determined from marigrams, has period of 15 min. 5 km away, but in an other, bigger bay (Kaštelanski zaljev), there is another tide gauge (point (rt) Marjan). The maximum wave height here was 10 cm. The seiche of the bay Kaštelanski zaljev, as often registered, has a period of 1 hour.

For the bay Vela Luka the seiche period is not determined, as there is not a tide gauge there. Using the formula by Goldberg (1937), the period is 12.44 min. Here the waves were most destructive. Most probably the funnel-shaped form of the bay favours also its easy excitement.