



## **The Coastal Circulation Model of Buyuk Menderes River and adjacent Coastal Areas**

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Coastal circulation models are needed to identify dynamics of combined flow field under different and parameters like; wind, wave, tide, river forcing. This study focuses on Büyük Menderes River and adjacent coastal areas. Running through one of the most important plains of Turkey, Büyük Menderes River is affecting the morphodynamics and the water quality of the Büyük Menderes Delta.

The modeling process has been achieved via Finite Volume Coastal Ocean Model (FVCOM). The parameters were used among the list; Coriolis Force, salinity, solar radiation, tidal forcing, wind forcing, wave forcing, river forcing. Besides long-term observations, those parameters were tested under extreme conditions, like; high river discharge, storm conditions and sea level rise, to see the results mainly on circulation in the domain under wave-current interaction.

The result of the model is the key for understanding the circulation inside the domain and further studies. In situ data, which is a part of a previous The Scientific and Technological Research Council of Turkey (TUBITAK) study of 9 Eylül University and Middle East Technical University, was used for validation and calibration of the main mathematical model. With all those measured data, different scenarios were tested, so the outcomes of the main model were used to establish a general model which works under the same parameters and conditions and different combinations of those.

**Key Words:** Circulation Model, Wave-Current Interaction, Büyük Menderes River, FVCOM