

Abstract

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Submerged Breakwater for the North Coast of Egypt

The western north coast of Egypt (Alexandria – Matrouh coastal road from Km 21 to Km 90) suffers from sudden change of bed slope within a small surf zone width. This leads to strong rip currents, wave breaking near the shore and huge amount of sediment transport. Although the shore line is relatively stable through out the years, it is quite dangerous for humans to use the surf zone for swimming and recreational purposes. Human interaction using parallel, detached and perpendicular breakwaters have caused severe adverse results (high sedimentation at a side and progressive scouring at the other side). A unique model for alleviating sever wave and current conditions at the western coast is presented in this paper .Submerged breakwater model is introduced and theoretically tested and approved to provide safe shore areas with the least side effects for many locations .This submerged breakwater alleviates wave heights ,eliminates rip current and greatly control any unfavourable shore line changes. The only draw back of this submerged breakwater that it may not work perfectly for regions with great steep slope degradation and quite small surf zone.