Abstract

Submerged Floating Tunnel (SFT) or Archimedes Bridge is an innovative technology in the field of transport infrastructure that is used to connect between the islands with other islands. Economic factors are the main reason SFT, because it does not require a pillar. In principle, the SFT utilizes buoyancy force that occurs in water. The ratio of the buoyancy force with the vertical loads on the SFT is called buoyancy weight ratio (BWR). BWR is a major parameter in the stability of the structure of SFT, then conducted a study to determine the value of BWR. This is because each region has waters buoyancy force different. The study of BWR done in software analysis using Finite Element Method (FEM) SAP2000 v.14.2.2. From the analysis of the results obtained by the effective value of BWR 1,3. The effective yield effective results coupled with other parameters, hereafter made effective modeling and analysis. Effective modeling results SFT prototype structure is BWR 1,3; placement end of the tunnel joints; 54° angle and cable configurations. Using properties define "cable", and the provision of initial tension of 26.1 kN (cable material specification) with the type of non-linear wave analysis.
Keyword; Submerged Floating Tunnel (SFT), Buoyancy Weight Ratio (BWR), Finite Element Method, modeling effective.