

ABSTRACT

(Key Words: High Aswan Dam Lake, Evaporation, Models, Trend)

The process of evaporation is a complex phenomenon, which includes physical processes in several aspects of physics. Accurate estimation of evaporation is important for designing and planning projects in which water budget is a key factor as well as for conservation of water. Although considerable progress has been made in understanding and measuring evaporation, however the methods used in the past have serious short-comings measuring evaporation. Therefore, developing more accurate measurements and predictions is needed.

HADL evaporation prediction have been and still studied by many researchers to choose the best model of the Lake evaporation prediction. In this study many methods and models were tested and correlated to water budget to find the best model for Lake evaporation prediction. These methods namely water budget method, energy budget method, mass transfer method, radiation methods, temperature based methods and combination methods. Then trend analysis was performed on Lake Inflows and evaporation both monthly and annually. The results showed that energy budget method, especially Priestley-Taylor model is the best model representing the Lake Evaporation. Also the trend analysis showed that, there is no accountable change in Lake inflows, as well as evaporation at any month or even in annual basis.