

## Scrutinization of saline sea utilizing a water-based antenna for the radio communications

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### **ABSTRACT**

The Arabian Gulf water could play a vital role in the context of the next modern life that should occupy as well as avail countries resources. The distinguished natural characteristic which is generally considered drawbacks from one side due to water composition such as high salinity, need a fresh look to prove the unique feature of the water in the gulf could become a significant advantage through transparency, easy access, and conductive ions to carry the electric current flow, although it is widely recognized about the Arabian Gulf water is subject to high dissolution as well snags in desalination. But Gulf water antenna could give unprecedented features that would contribute positively to the whole area in users' connection demand, government security and civilization facilities. The paper proposed Gulf Seawater Antenna Model GSAM in line with the region's condition to accommodate the natural environmental stark parameters. While the comparative result shows the fluctuation between magnitude and phase response based on frequency utilized, as well as the water surface perforation which represents a segment of the proposed contribution without compromising the environment. At the same time, the clear exponential relation between conductivity and salinity led to offering a proper water antenna identification. Overall, the investigation proposed a water antenna in the gulf region to provide significant utilities based on its unique specifications using the most significant parameters that would promise avenues for novel notions research.

### **KEYWORDS**

Conductivity; Perforation; Propagation; Salinity; Water antenna

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