

## LIDAR applications in atmosphere, oceanography and archeology

### Abstract

This paper is a review paper of lidar and it overviews Lidar technology contribution in different areas of today's modern world. Lidar invented in 1960 stands for light detection and ranging'. Lidar is a detection system that works on the same principal of radar but it uses laser light instead. It is based on a principal of targeting some object or surface using the laser light. The light is reflected back to the receiver and a 3D image is obtained. Lidar applications in atmospheric regime, oceanographic and archeological investigation are studied in this paper. Lidar has wide number of applications that includes terrestrial, storm surge modeling, air borne and mobile applications, topographic, map line shoring and coastal flood exposure.

Lidar has been largely contributed to study and investigate highly variable atmospheric parameters over the past few decades. These atmospheric parameters include measurement of ozone fluxes, water vapors, monitoring emission rates, concentration of trace gases etc.

The new and modern applications of lidar are now in the field of oceanography. It is used to find the intertidal zone, tidal flat and coastal zone using the lidar technology by acquiring three dimensional coordinates with high precision.

The signs of old civilization are mostly covered by vegetation, rain forestation, dust and storm. In order to uncover the hidden gems of theses archaeological sited, lidar is used which is relatively new technology for the archaeologists. Examples of these sites uncovered by Lidar are New England, Mesoamerican civilization and many others.

**Keywords:** Lidar, laser, Atmosphere, Oceanography, Archeology