Development of Bathymetric Techniques

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SUMMARY
Preparation of modern nautical charts which are very essential to marine commerce safety, location of underwater works, coastal zone management, volumes of underwater excavation, volume of water in lakes, fish, ship and mineral industries are examples of application of underwater depth. Historically, the first hydrographic method used in water depth determination was the sounding line which has then been replaced by the acoustic sounding techniques that solved the problem of deep water depth measurement. Both techniques were shipboard instruments that have the limitation of efficiency and time consuming. This is why a vast area of world water bodies are still not covered for water depth determination. Recent techniques, all classified as remote sensing techniques including airborne LIDAR, airborne and satellite sensors that work with optical or radar waves are used to determine water depth especially for vast water areas such as seas and oceans. This paper is an attempt to review techniques used for water bathymetry, comparing them as far as accuracy, limitations, cost and efficiency. Some examples of applications of recent methods will be outlined too.