

# Underwater Photogrammetry for Change Detection

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## SUMMARY

Underwater surveying has been used for several applications in oil industry, archaeology and biology. The presentation will focus the attention on underwater photogrammetric surveying for change detection applications. Structure from Motion photogrammetry and underwater imagery allow the three-dimensional quantification of submersed structures characteristic at patch scale and structural complexity. High accuracy and resolution are required in order to guarantee the repeatability of surveys over time within the same reference system; a proper geodetic network and acquisition scheme are mandatory as well for 3D models generation.

The direct comparison of the two subsequent point clouds is effective in order to evaluate the main trends and deformation analyses with the goal to join under cm accuracy.

Some examples of uw photogrammetry for change detection will be shown and particularly

a multi-temporal underwater photogrammetric survey of a reef patch located in Moorea Island to detect a coral growth of less than 10 mm\years.