Dear Editors

On behalf of my coauthors I am submitting as corresponding author the manuscript: **"Investigating submerged morphologies by means of the low-budget "GeoDive" method (high resolution for detailed 3D reconstruction and related measurements)"** of Giovanni Gaglianone, Jacopo Crognale and Carlo Esposito, for a possible publication on "Acta IMEKO Journal".

I attest that all authors listed on the title page have read the manuscript, attest to the validity and legitimacy of the data and its interpretation, and agree to its submission to the "Acta IMEKO Journal".

The work is an upgrade of the paper "High resolution with small budget: the "GeoDive" method for detailed 3D reconstruction of submerged morphologies and related measurements", presented at the Congress "IMEKO TC19 WORKSHOP on METROLOGY FOR THE SEA" held in Naples, (Italy) on October 11th – 13th 2017".

This contribution presents a low budget method (named "GeoDive") for surveying with high accuracy nearshore shallow waters, during direct surveys performed by underwater SCUBA operators; the method allows to map the submerged morphologies and to acquire high-resolution optical images for further photogrammetric processing and to obtain 3D high-resolution models of the bottom, especially where shallow waters can represent a limit for using geophysical methods and/or it is not possible to use certain vessels and techniques. The method can be validly used to characterize undetected bottom morphologies, but also to clarify and/or validate underwater morphologies, in specific points, previously reconstructed with other indirect methodologies. We tested and tuned the method on two test sites (lake and sea), featured by the presence of "block fields" (i.e., accumulations of huge blocks and boulders of gravitational origin) under shallow waters.

Compared to the previous version, this paper represents an evolution, having added a characterization of lake sediments in the first investigated area, albeit preliminary, and expanded the results obtained and the discussions and consequently the conclusions, as well as having presented new and more accurate "images" that better give the idea of the activity carried out.

G.G., J.C. and C.E. developed the ideas and the methods for this study. G.G. and J.C. performed the underwater surveys and the video acquisitions. G.G. carried out sampling and laboratory analyses. J.C. has carried out the elaborations of the videos and the 3D reconstructions. G.G. and C.E. wrote jointly the paper. All the authors discussed extensively the results and the interpretations.

Thank you for your time and consideration. I look forward to hearing from you.

Sincerely

Giovanni Gaglianone

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