

# 2nd International Workshop UNDERWATER 3D RECORDING & MODELLING:

A tool for modern applications and CH recording



## PROGRAM

Time	THURSDAY 2/5	
8:00-9:00	Registration	
	<b>OPENING</b> <span style="float: right;">chair: Dimitrios Skarlatos</span>	
9:00-9:30	<ul style="list-style-type: none"> <li>▪ Phaedon Kyriakidis, <i>Dean, Faculty of Engineering and Technology - Professor, Department of Civil Engineering and Geomatics, Cyprus University of Technology, Cyprus</i></li> <li>▪ Andreas Georgopoulos, <i>CIPA President - Professor, School of Rural and Surveying Engineering, National Technical University of Athens, Greece</i></li> <li>▪ Fabio Menna, <i>ISPRS WGII/9 Underwater Data Acquisition and Processing - System &amp; Vision Engineer, COMEX</i></li> <li>▪ Dimitrios Skarlatos, <i>Workshop Chair - Associate Professor, Department of Civil Engineering and Geomatics</i></li> </ul>	
09:30-10:20	<b>Keynote Presentation: OMNIDIRECTIONAL UNDERWATER COMPUTER VISION RESEARCH AND APPLICATIONS AT THE UNIVERSITY OF GIRONA</b> Rafael Garcia and Nuno Garcias, Universitat de Girona, Underwater Vision and Robotics group	
10:20-11:00	Coffee break	
	<b>BATHYMETRY SESSION</b> <span style="float: right;">chair: Fabio Menna</span>	
11:00-12:30	▪ 3D UNDERWATER MINE MODELLING IN THE ¡VAMOS! PROJECT <span style="float: right;">Bleier et al.</span>	
	▪ SHALLOW WATER BATHYMETRY MAPPING FROM UAV IMAGERY BASED ON MACHINE LEARNING <span style="float: right;">Agrafiotis et al.</span>	
	▪ IMPROVEMENTS IN LIDAR BATHYMETRY DATA ANALYSIS <span style="float: right;">Maas et al.</span>	
	▪ BATHYMETRIC SURVEYING IN LAKE SUPERIOR: 3D MODELING AND SONAR EQUIPMENTS COMPARING <span style="float: right;">Levin et al.</span>	
12:30-13:05	<b>POSTER PITCH PRESENTATIONS</b> <span style="float: right;">chair: Fabio Menna</span>	
13:05-14:15	Lunch break	
	<b>POSTER SESSION</b>	
14:15-15:15	▪ UNDERWATER PHOTOGRAMMETRY DIGITAL SURFACE MODEL (DSM) OF THE SUBMERGED SITE OF THE ANCIENT LIGHTHOUSE NEAR QAITBAY FORT IN ALEXANDRIA, EGYPT <span style="float: right;">Abdelaziz et al.</span>	
	▪ PHOTOGRAMMETRIC TECHNIQUES FOR THE RECONSTRUCTION OF UNDERWATER 3D MODELS OF SEABED AND ARTIFACTS <span style="float: right;">Barrile et al.</span>	
	▪ THE SUBMERGED HERITAGE: A VIRTUAL JOURNEY IN OUR SEABED <span style="float: right;">Barrile et al.</span>	
	▪ CAN AN INEXPENSIVE PHONE APP COMPARE TO OTHER METHODS WHEN IT COMES TO 3D DIGITIZATION OF SHIP MODELS <span style="float: right;">Lewis et al.</span>	
	▪ SEMI-AUTOMATIC METHOD OF FAN SURFACE ASSESSMENT TO ACHIEVE GORGONIAN POPULATION STRUCTURE IN LE DANOIS BANK, CANTABRIAN SEA <span style="float: right;">Prado et al.</span>	
	▪ 3D MODELING OF RIO MIERA WRECK SHIP MERGING OPTICAL AND MULTIBEAM HIGH RESOLUTION POINTS CLOUD <span style="float: right;">Prado et al.</span>	
	▪ COMPLEMENTARITY BETWEEN IN SITU STUDIES AND PHOTOGRAMMETRY: METHODOLOGICAL FEEDBACK FROM A ROMAN SHIPWRECK IN CAESAREA, ISRAEL <span style="float: right;">Derenne et al.</span>	
	<b>SPONSORS PRESENTATIONS</b> <span style="float: right;">chair: Panagiotis Agrafiotis</span>	
15:15-15:35	<ul style="list-style-type: none"> <li>▪ 3D Research srl.</li> <li>▪ iMARECULTURE H2020 project</li> </ul>	
15:35-16:20	Coffee break	
	<b>VR and AR SESSION</b> <span style="float: right;">chair: Erica Nocerino</span>	
16:20-17:50	▪ THE ENHANCEMENT OF UNDERWATER CULTURAL HERITAGE ASSETS USING AUGMENTED REALITY (AR) <span style="float: right;">Malliri et al.</span>	
	▪ THE DIGITAL RESTITUTION OF LOT 3317: USING UNDERWATER IMAGE BASED MODELLING TO GENERATE VALUE IN VIRTUAL HERITAGE EXPERIENCES <span style="float: right;">Tousant et al.</span>	
	▪ UNDERSTANDING UNDERWATER PHOTOGRAMMETRY FOR MARITIME ARCHAEOLOGY THROUGH IMMERSIVE VIRTUAL REALITY <span style="float: right;">Dolezal et al.</span>	
	▪ VIRTUAL TOUR IN THE SUNKEN "VILLA CON INGRESSO A PROTIRO" WITHIN THE UNDERWATER ARCHAEOLOGICAL PARK OF BAIAE <span style="float: right;">Bruno et al.</span>	
20:30	Social Dinner	

Time	FRIDAY 3/5	
9:00-9:40	<b>Keynote Presentation:</b> EXPLORING UNDERWATER SITES THROUGH VIRTUAL AND AUGMENTED REALITY Fabio Bruno, 3D Research srl. - University of Calabria	
09:40-10:25	<b>UW IMAGE PROCESSING</b> chair: Fabio Bruno	
	▪ ITERATIVE REFINEMENT FOR UNDERWATER 3D RECONSTRUCTION: APPLICATION TO DISPOSED UNDERWATER MUNITIONS IN THE BALTIC SEA	Song et al.
	▪ IMAGE QUALITY IMPROVEMENTS IN LOW-COST UNDERWATER PHOTOGRAMMETRY	Neyer et al.
10:25-11:10	Coffee break	
11:10-13:05	<b>BIOLOGY SESSION</b> chair: Panagiotis Agrafiotis	
	▪ 3D HABITAT COMPLEXITY OF CORAL REEFS IN THE NORTHWESTERN HAWAIIAN ISLANDS IS DRIVEN BY CORAL ASSEMBLAGE STRUCTURE	Burns et al.
	▪ SEMANTIC SEGMENTATION OF BENTHIC COMMUNITIES FROM ORTHO-MOSAIC MAPS	Pavoni et al.
	▪ COMPARISON OF DIVER-OPERATED UNDERWATER PHOTOGRAMMETRIC SYSTEMS FOR CORAL REEF MONITORING	Nocerino et al.
	<b>METROLOGY SESSION</b> chair: Dimitrios Skarlatos	
13:05-14:35	▪ ON SCALE DEFINITION WITHIN CALIBRATION OF MULTI-CAMERA SYSTEMS IN MULTIMEDIA PHOTOGRAMMETRY	Kahmen et al.
	▪ EVALUATION OF VISION-BASED LOCALIZATION AND MAPPING TECHNIQUES IN A SUBSEA METROLOGY SCENARIO	Menna et al.
	Lunch break	
14:35-16:05	<b>UW ARCHAEOLOGICAL 3D MAPPING</b> chair: Andreas Georgopoulos	
	▪ PRECISION POTENTIAL OF UNDERWATER NETWORKS FOR ARCHAEOLOGICAL EXCAVATION THROUGH TRILATERATION AND PHOTOGRAMMETRY	Skarlatos et al.
	▪ ONTOLOGY-BASED WEB TOOLS FOR RETRIEVING PHOTOGRAMMETRIC CULTURAL HERITAGE MODELS	BenElefi et al.
	▪ DOCUMENTATION AND MONITORING OF UNDERWATER ARCHAEOLOGICAL SITES USING 3D IMAGING TECHNIQUES: THE CASE STUDY OF THE "NYMPHAEUM OF PUNTA EPITAFFIO" (BAIAE, NAPLES)	Bruno et al.
	▪ THE PROGRESS OF SURVEY TECHNIQUES IN UNDERWATER SITES: THE CASE STUDY OF CAPE STOBA SHIPWRECK	Costa
16:05-16:35	Closing	

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