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2021 IEEE INTERNATIONAL WORKSHOP ON

Metrology for AeroSpace

MetroAeroSpace2021

www.metroaerospace.org

23-25 JUNE 2021

NAPLES, ITALY

CALL for PAPERS ««««

Università degli Studi di Napoli FEDERICO II · UNIVERSITÀ DEGLI STUDI DEL SANNIO

»»»» *for the Special Session on*

ADVANCES ON MULTIMODAL IMAGING BASED INTELLIGENT SYSTEMS IN AEROSPACE METROLOGY

ABSTRACT

The session goal is to provide a unique forum for multi-modal image analysis and processing topics. Multi-modal imaging refers to systems able to acquire multiple 2D or 3D information about real scenes, with different sensing modality (ex: 3D point cloud, visible and infrared images, thermal images, hyperspectral sensing, and so on). Researchers, developers and practitioners are encouraged to present the latest advance on modeling methodologies ranging from sensing technologies to applications. The session is focused on both: a) the metric performance of sensors and algorithms for producing the most accurate and reliable geometric measurements and models; and b) applications in different fields with a specific emphasis on exploiting Artificial Intelligence methodologies.

The session is centered on topics related to multimodal imaging systems (calibration, performance, accuracy, etc.) and their application in Aerospace for object recognition, motion estimation, 3D reconstruction, autonomous mobile robot navigation, quality control, assembly in manufacturing, security, environment monitoring.

The sensing technology, with a specific reference to multimodal imaging, is producing a plethora of high performance sensors enabling to approach both new application contexts and revisiting consolidated applications.

TOPICS

We invite submission of original research contributions, as well as demonstrations of successful applications in the Aerospace field in particular following technical areas:

- **MULTI-MODAL SENSING: TECHNOLOGY**
  - 3D passive sensors
  - 3D active sensors
  - Hyperspectral imaging
  - Light-field 3D sensing
  - Full-field methods for inspection

- **MULTI-MODAL SENSING: PROCESSING**
  - Calibration
  - Image and range based modelling
  - 3D passive Reconstruction
  - 3D active reconstruction
  - Motion analysis
  - Real-time processing technology
  - Expert system for detection and diagnosis of defects

- **MULTI-MODAL SENSING: APPLICATIONS**
  - Object recognition
  - Scene interpretation
  - Autonomous robot navigation
  - Surveillance
  - Environmental monitoring
  - Surface quality control
  - Industrial Inspection
  - Automation for material testing
  - Development compact systems for in-situ inspection
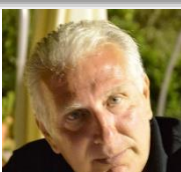 - Innovative systems for imaging and display systems

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