

Speaker Abstracts Karlsruhe Days of Optics & Photonics



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Hybrid SLAM Approaches - Automatic Pose Estimation and 3D Mapping with Small Mobile Mapping Platforms

SLAM (Simultaneous Localization and Mapping) algorithms belong to the core components of almost any automatic mobile mapping system in Computer Vision, Robotics, Photogrammetry or Remote Sensing. While the basic foundations have been developed decades ago and are understood very well, many today's developments concentrate on improving or re-designing SLAM algorithms under the light of new light-weight consumer sensors which, for instance, could also be mounted on drones or other flexible and small mobile mapping platforms. With this background, the talk will touch topics like new camera models, on-the-fly self-calibration, sensor fusion, navigation, 3D mapping and accuracy estimation. Examples taken from „real-world“ applications will show the potentials, yet also the remaining deficiencies and fields for future research in this topic.