3D Laser Imaging Techniques: advantages, limitations, technological and scientific challenges

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Résumé

Résumé: *3D laser imaging systems operate at night in all ambient illuminations and weather conditions. These techniques can perform the strategic surveillance of the environment for various worldwide operations (up to long ranges). Onera, the French aerospace lab, develops and models new active imaging concepts based on new sensor technologies. The knowledge of the relevant physical phenomena impacting on the performances of such 3D-lidar techniques is essential to face the new scientific challenges.*

Bio: *Nicolas Riviere is a research scientist in the Optronics Department at Onera. He received his engineering degree in Physics in 2002 from the University of Toulouse (France) and obtained his Ph.D. degree in Physics in 2006. His research activities currently concern modeling for imaging and ranging applications (3D-lidar techniques). He also contributes to the development of new experimental setups for validating new concepts in laser imaging. He manages French national and European projects on behalf of Onera with the aim of providing to the operator the surrounding laser vision in all-weather conditions.*

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