

Announcement

The U. V. Helava Award 2016 – 2019

The U.V. Helava Award, sponsored by Elsevier B.V. and Leica Geosystems AG, is a prestigious ISPRS Award, which was established in 1998 to encourage and stimulate submission of high quality scientific papers by individual authors or groups to the ISPRS Journal, to promote and advertise the Journal, and to honour the outstanding contributions of Dr. Uuno V. Helava to research and development in photogrammetry and remote sensing.

The Award is presented to authors of the best paper, written in English and published exclusively in the ISPRS Journal during the four-year period from January of a Congress year, to December of the year prior to the next Congress.

The award consists of a monetary grant of 10,000 SFr., certificates and a silver plaque. It is sponsored by Elsevier B.V. and Hexagon Geosystems, while the Institute of Photogrammetry and Remote Sensing (Prof. Henrik Haggrén), Helsinki University of Technology (the University where Helava studied) paid half the costs for the silver plaque. The plaque was designed with care and enthusiasm by the 1980-88 ISPRS Technical Commission III President, Einari Kilpelä, previously professor at the Helsinki University of Technology.

A five-member Jury, comprising experts of high scientific standing, whose expertise covers the main topics included in the scope of the Journal, evaluates the papers. For each year of the four-year evaluation period, the best paper is selected, and among these four papers, the one to receive the U.V. Helava Award. The award winning paper for 2016-2019 is:

“Bundle adjustment with raw inertial observations in UAV applications” by Davide Antonio Cucci, Martin Rehak and Jan Skaloud (École Polytechnique Fédérale de Lausanne, Switzerland)

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<https://www.sciencedirect.com/science/article/pii/S0924271617301387>



Davide Antonio
Cucci



Martin Rehak



Jan Skaloud

Jury's rationale for the paper selection

This paper presents a new contribution to integrated sensor orientation. It overcomes problems encountered with the traditional, Kalman filter approach for deriving exterior orientation parameter estimates from integrated GNSS/IMU systems used for bundle adjustment. The authors' novel approach incorporates raw inertial observations into the bundle solution as a dynamic network adjustment. Their tight fusion method allows rigorous propagation of error models and properly treats correlations between observations. The success of their approach is experimentally demonstrated with real UAV data and is shown to be superior to the conventional approach for incorporating GNSS/IMU observations. The Jurors felt this is a highly significant work that presents a practical solution to a technically challenging problem. Moreover, they were impressed with large-scale applicability given the increasing utilization of UAVs for spatial data capture. They felt this well-written contribution represents a genuine scientific advance to photogrammetry and, therefore, very deserving of the U.V. Helava Award for 2016-2019.

The sixth U.V. Helava Award will be presented at the 24th ISPRS Congress in Nice, France, 4-10 July 2021 by Christian Heipke, ISPRS President, and representatives of the sponsors.

On behalf of the ISPRS and the U.V. Helava Award Jury, I would like to congratulate the authors for this distinction and thank them for their contribution. I would also like to thank the sponsors of the Award and the Jury members for their thorough evaluations and dedication to this important process.

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