

2025 IEEE International Conference on Space Optical Systems and Applications (ICSOS 2025)

**Kyoto, Japan
28-31 October 2025**

IEEE Catalog Number: CFP25CSO-POD
ISBN: 979-8-3315-2434-0



Copyright © 2025, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP25CSO-POD
ISBN (Print-On-Demand):	979-8-3315-2434-0
ISBN (Online):	979-8-3315-2433-3

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com

TABLE OF CONTENTS

An Overview of SPACE COMPASS Activity; Realize Space Integrated Computing Network applying Optical Communications Technology	1
<i>Tomohiro Araki, Jumpei Tanaka, Ryota Tanaka</i>	
Status of the ESA HyDRON Project	4
<i>Guray Acar, Ramon Mata Calvo, Christopher Vasko, Alejandro Pena, David Peter McGuinness Jose Castello, Pantelis-Daniel Arapoglou, Riccardo. Tuninato, Veronica Spirito, Lucien Canuet Lucien Canuet, David Alaluf, Mailys Guerault, Nils Fischer, Dirk Thurnes, Kasia Balakier Harald Hauschildt, Pablo Rueda Boldo, Josep Perdigues Armengol</i>	
Recent Developments in Laser Communication at CNES	11
<i>Geraldine Artaud, Frederic Lacoste, Francois Mendiburu, Jean-Luc Issler, Victor Darchy, Hugo Baranger Julien Sommer</i>	
LEO multi-orbit extension layer - HyDRON Element #2	18
<i>Daniele Lo Forti, Noemi Scaiella, Gabriele Titomanlio</i>	
Development Status of NICT's High-Speed Laser Communications Mission, "HICALI" on Engineering Test Satellite 9 (ETS-9)	22
<i>Yasushi Munemasa, Hideaki Kotake, Hideki Takami, Yoshimi Rokugawa, Yoshihiko Saito, Kenta Sakabe Alberto Carrasco-Casado, Takayuki Usami, Yuma Abe, Jun-Ichi Nakazono, Dimitar R. Kolev Koichi Shiratama, Yasuhiro Takahishi, Toshihiro Kubo-Oka, Hiroyuki Tsuji, Amane Miura Morio Toyohima</i>	
In-orbit Test Results of a 1 Gbps Free Space Direct-to-Earth Optical Satellite Link of a CubeSat-compatible Laser Communication Terminal	26
<i>K. Broekens, M. Aimar, G. Artaud, D. de Bruijn, J. Chab��, C. Courde, N. Doelman, E. Fernandez Rodriguez R. Herfst, F. van Kempen, C.W. Korevaar, H. Marley, Nicolas Maurice, D.-N. Nguyen, D.H. Phung N. Raymond, E. Samain, J. Scariot, E. Veldhuis</i>	
Experimental Demonstration of Next-Generation FEC-Coded Data Transmission for GEO Satellite-to-Ground Laser Link Using LUCAS Onboard the Optical Data Relay Satellite	30
<i>Hideaki Kotake, Yasuhiro Takahashi, Dimitar Kolev, Yohei Satoh, Takamasa Itahashi, Shiro Yamakawa Eiji Okamoto, Amane Miura, Morio Toyoshima</i>	
Overview of the CubeSOTA mission: A miniaturized lasercom terminal onboard a 6U CubeSat	36
<i>Alberto Carrasco-Casado, Koichi Shiratama, Dimitar R. Kolev, Hiroyuki Tsuji, Amane Miura Morio Toyoshima</i>	
QEYSSat and QKDSat: Quantum Communications at Honeywell	41
<i>Hugh Podmore, Warren Soh, Alexander Pickston, Michael Taylor, Thomas Jennewein, Brendon Higgins Paul Godin, Alan Scott, Marc Salsbury, Amit Rao, Barrett Taylor</i>	
Preliminary results of optical downlink between QUBE satellite to the upgraded Optical Ground Station Oberpfaffenhofen - experiments towards quantum key distribution	51
<i>Johannes Prell, Shrestha Amita, Benjamin R��diger, Ren�� R��ddenklau, Alexandru Dului Anne-Laure Cheffot, Jonas Rittershofer, Lisa Bardou, Christian Fuchs</i>	

Experimental Evaluation of Background Sky Radiance and Filtering Techniques for Satellite QKD Using Small and Large Aperture Telescopes	60
<i>Aristeidis Stathis, Argiris Ntanos, Panagiotis Kourielias, Manolis Xilouris, Athanasios Marousis Athanasios Panagopoulos, Hercules Avramopoulos, Giannis Giannoulis</i>	
Quantum key distribution (QKD) implementation in spaceborne optical telecommunications focal plane	68
<i>Raphaël Malifaud, Régis Grassier, Adrien Barbet, Yann Gaeremynck, Hélène Krol, Vincent Pollier</i>	
Deep Space Proton Radiation Resistance of Enhanced Silver Mirrors	76
<i>Anna Sytchkova, Deividas Rūškys, Alexandr Belosludtsev</i>	
Research And Development Of Satellite-Mounted 30cm Aperture Optical Antenna System For Cislunar Optical Communication Systems In Japan	80
<i>Yoshihiko Saito, Hideaki Kotake, Shota Kimura, Katsumi Makino, Johta Awano, Morio Toyoshima</i>	
Coherent Combination of Deep-Space Optical Signals Under Weak Atmospheric Turbulence	84
<i>Antoni Mikos-Nuszkiewicz, Karol Łukanowski, Marcin Jarzyna, Konrad Banaszek</i>	
Received Optical Power Statistics analysis for bidirectional optical feeder links measurements with FEELINGS and TELEO	88
<i>Nicolas Védrenne, Cyril Petit, Aurélie Montmerle-Bonnefois, Florian Quatresooz, Geoffrey Maulion Jérôme Henrion, Yann Lai-Tim, Axel Vincent-Randonnier, Sylvain Poulenard, Laurent Coret Jean-Frédéric Chouteau, Thomas Anfray, Jean-Christophe Richard, Alvaro-Jose Pascual-Gracia Xavier Gnata, Sarah Montigaud, Ludovic Blarre</i>	
Experimental Demonstration of Intensity-based Angular Phase Estimation on Binary Stars and Application to GEO-Feeder links	92
<i>Perrine Lognoné, Richard Wilson, James Osborn</i>	
Robust MISO coherent optical GEO satellite feeder link with relaxed implementation constraints	98
<i>Youssef Minyari, Aubin Lecointre, Raphaël Le Bidan, Charly Poulliat</i>	
Preparing the next generation of AO-compensated Ground-to-GEO Bidirectional Optical Links by fine analysis of the current systems limitations and numerical test of advanced AO concepts	107
<i>Aurélie Montmerle Bonnefois, Cyril Petit, Perrine Lognoné, Timothée Vène, Florian Quatresooz Kylliann Robert, Jérôme Henrion, Geoffrey Maulion, Yann Lai-Tim, Axel Vincent-Randonnier Jean-Marc Conan, Laurent Mugnier, Laurie Paillier, Nicolas Védrenne, Laurent Coret, Sylvain Poulenard Thomas Anfray, Xavier Gnata, Sarah Montigaud, Jean-Christophe Richard</i>	
Ground-to-GEO Bidirectional Optical Links between TELEO and various OGS: In Orbit Test Result, Experimental Comparison with Numerical Models for power budget and telecom link margins	114
<i>Sylvain Poulenard, Alvaro Jose Pascual-Gracia, Jean Frédéric Chouteau, Thibault Marduel Frédéric Lacoste, Géraldine Artaud, Julien Sommer, Bouchra Benammar, Thierry Lanz, Etienne Samain Loïc Eymar, Baptiste Jans, Alain Thomas, Nicolas Védrenne, Aurélie Montmerle-Bonnefois, Cyril Petit</i>	
Battling the Sun in Geostationary Optical Feeder Link Scenarios	121
<i>Vardan Semerjyan, Terrence Moran, Alessandro Matheoud, Gilles Ackaert, Stephen Doherty Francesca Del Monaco</i>	
Memory-Efficient Backup Routing in Optical Satellite Networks	129
<i>Kazuki Takashima, Shunichiro Nomura, Ryu Funase, Shinichi Nakasuka</i>	
Lasercom as an enabler for multiorbit networks in space	139
<i>Jörg Roller, Herwig Zech, Frank Heine</i>	

Extending a Hybrid Radio-Optical Communication Simulator for Timing Applications	143
<i>Vinicius Ferreira Nery, Shunichiro Nomura, Kazuki Takashima, Shinichi Nakasuka</i>	
Feasibility of DTE GEO and LEO telemetry links with a possible example of global network of OGS	153
<i>Jean-Luc Issler</i>	
Developments of an optical ground station network for LEO-to-ground satellite data services	162
<i>Marcus Birch, Hanna Sundberg, Marc Sans, Anton Bjöörn, Petrus Hyvönen</i>	
Up to 200G Coherent COTS Evaluation against Atmospheric Dynamic Fadings	170
<i>Anaëlle Maho, Tarik Benaddi, Lisa Tonnelier, Dorian Montagut, Gauthier Bechet, Simon Lévêque</i>	
<i>Mathilde Gay, Thierry Chartier, Laurent Bramerie, Michel Sotom</i>	
Investigation of Fade Mitigation Methods on Experimental FSO LEO-to-Ground Links	175
<i>Cuong T. Nguyen, Hoang D. Le, Dimitar R. Kolev, Alberto Carrasco-Casado, Toshihiro Kubo-Oka</i>	
<i>Hiroyuki Tsuji, Morio Toyoshima, Anh T. Pham</i>	
Latest results and perspectives of TILBA-ATMO system for LEO satellite to ground optical links following SDA & CCSDS standards	182
<i>Clara Abbouab, Claire Autebert, Cédric Dautancourt, Josselin Huby, Antonin Billaud, Laurent Prioul</i>	
<i>Julien Samaan, Ahmed Khalifa</i>	
Investigating methods to suppress beam-wander in Earth-to-LEO optical communications	188
<i>B. Dilusha Silva, Brett D. Nener, Matthew Tai, Kerry Mudge, Bradley Clare</i>	
GPU-Accelerated Multilayer Turbulence Simulation for Modeling of Space-to-Ground Optical Links	193
<i>Hamed Akhlaghi, Michael Taylor, Antony Orth, Steve Hranilovic</i>	
Forward Error Correction Considerations for Optical Satellite Links	199
<i>Eugenio Estinto, Scott Allwine, Luca Estinto</i>	
SkySeg: Temporally Enhanced Whole-Sky Image Segmentation with MLP-Mixer For Cloud Recognition	207
<i>Huyen T. T. Tran, Phuc V. Trinh, Dimitar R. Kolev, Alberto Carrasco-Casado, Kenji Suzuki</i>	
<i>Toshihiro Kubooka, Hiroyuki Tsuji, Morio Toyoshima, Anh T. Pham, Truong Cong Thang</i>	
Utilization of Meteorological Data in Site Diversity Technique for Optical Satellite Communications	211
<i>Mai Yoshikawa, Dimitar Kolev, Ikuko Yairi, Yuma Abe, Hiroyuki Tsuji</i>	
Preliminary Study on Application of Graph Signal Processing to Satellite Adaptive Optics	214
<i>Yuma Abe, Kenta Sakabe</i>	
Mode-Pairing in Satellite-based Quantum Key Distribution Networks	218
<i>Philipp Kleinpaß, Davide Orsucci</i>	
The French Optical Ground Station: Multi-orbit capabilities for optical communications	222
<i>Geraldine Artaud, Thierry Lanz, Alain Thomas, Hisham Forriere, Nicolas De Guembecker, Laurent Coret</i>	
<i>Hugo Baranger, Victor Darchy, Frederic Lacoste, Loïc Eymar, Daniele Battaglino, Pierre Geneslay</i>	
<i>Fergal O’Kane, Erick Bondoux, Romain Drouilly, Louise Garcia, Baptiste Jans, Julien Vincenti</i>	
<i>Sylvain Poulenard, Alain Quentel, Anne-Sophie Bruni Favier, Baptiste Siquin, Armin Schimpf</i>	
<i>Etienne Samain</i>	

On-ground tests of LASIN free space optical communication system dedicated to CO3D constellation	226
<i>Nicolas De Guembecker, Alvaro Jose Pascual Gracia, Thomas Anfray, Jérémie Lochard, Alexandre Jullien Olivier Cambon, Mehdi Ghezal, Lyonel Barthe, Laurent Coret, Jean-Frédéric Chouteau Philippe Cheoux-Damas, Lionel Perret, Géraldine Artaud</i>	
Design and validation of a CCSDS O3K synchronization front-end, tailor made for a non-coherent 10 Gbps GEO optical downlink	230
<i>Alain Thomas, Alexandre Le Bian, Alain Quentel, Géraldine Artaud, Jean-Frédéric Chouteau Sylvain Poulenard, Thomas Anfray, Raphaël Le Bidan</i>	
Lab Demonstration of Optical Intersatellite Terminal Link and Data Transfer	234
<i>Al Scott, Barrett Taylor, Justin Cox, Momen Diab, Jan Prokopec, Jiri Rehor, Andrew Stanley Zahra Vaziri Zanjhani, Hugh Podmore</i>	
Real-time optical turbulence and wind profile monitoring with FEELINGS optical ground station	237
<i>Florian Quatresooz, Cyril Petit, Aurélie Bonnefois, Gaël Kermarrec, David Alaluf, Nicolas Védrenne</i>	
Thales Alenia Space Technology Roadmap toward Cross Atmosphere High Data Rate Optical Links	241
<i>Tarik Benaddi, Anaëlle Maho, Mickael Faugeron, Arnaud Le Kernec, Bernard Charrat, David Lefebvre Valentin Leloup, Luca Lazzarini, Cyrille Laborde, Cécile Caille, Michel Sotom</i>	
Optical Feeder Link System Design via Simulation and Emulation Tools	245
<i>Samuele Raffa, Gianluca La Torre, Linus Reger, Joana Sul Torres, Carl Valjus, Juraj Poliak</i>	
Climate Change Implications for Cloud Cover and Optical Communications	249
<i>Brett Nener, Mervyn Lynch, Helen Chedzey, Caitlin Dunbar</i>	
Antenna gain optimisation with fiber to telescope terminal (FiTT) for high throughput optical communication	253
<i>Vincent Pollier, Marco Casale, Florestan Luga, Régis Grasser</i>	
Multi-Camera Acquisition and Tracking for Free-Space Optical Communication	256
<i>Alexandru Dului, Johannes Prell, Amita Shrestha</i>	
Performance and Reliability of 10 W-Class High-Power Optical Amplifiers for Space Laser Communications on Geostationary Satellites	260
<i>Hiroki Kobayashi, Masatoshi Mitaki, Yasuhiro Sakata, Masato Takeishi, Masaki Tanaka, Natsuki Nishio Sho Suzuki, Yasushi Suzuki, Yasutoshi Takada, Eiichi Mizuta, Yohei Satoh, Takamasa Itahashi Shiro Yamakawa, Yoshikaki Konishi, Hidenori Shimizu, Yuzo Yajima, Hikari Mochizuki, Eisuke Haraguchi Toshiyuki Ando, Masaki Noda</i>	
Gamma radiation testing of reduced-clad Erbium-doped fibers and demonstration of an ultra-compact EDFA for satellite laser communications	263
<i>Ahmed Osman, Giannis Psyllakis, Ilias Sourikopoulos, Theodoros M. Triantis, Leontios Stampoulidis</i>	
FSO Diversity for RIS-Assisted Non-Terrestrial Networks	267
<i>Yishan Tan, Sheikh Salman Hassan, Tharmalingam Ratnarajah, Majid Safari</i>	
A Study of Adaptive Optics Based on Altitude Profile of Atmospheric Turbulence for Uplink Pre-compensation in Laser Satellite Communication	271
<i>Yoshimi Rokugawa, Kenta Sakabe, Yoshihiko Saito, Hideki Takami</i>	
Software Architecture for Multi-Domain Pointing, Acquisition and Tracking in Free-Space Optical Communication	275
<i>Alexandru Dului, Amita Shrestha</i>	

Development of a Micro-Integrated Diode Laser Module for Application in a Space-Borne Optical Clock	279
<i>Dian Zou, Norbert Müller, Max Schiemangk, Janpeter Hirsch, Stephanie Gerken, Nora Goossen-Schmidt Mathis Müller, Andreas Wicht</i>	
A Binary Water Vapor Attenuation Model for Path Selection in Laser-based Non-Terrestrial Networks	283
<i>Tomohiro Korikawa, Kyota Hattori, Chikako Takasaki, Takaaki Moriya</i>	
Relevance of the NWC SAF Cloud Type product to assess the impact of clouds on Free Space Optical Communication	285
<i>Nicolas Sebastien, Olivier Liandrat, Guillaume Roussel, Mehdi Ben Slama, Mathieu Turpin Sébastien Marchal, Nicolas Schmutz</i>	
Wavelength Trade-offs in Satellite-to-Ground QKD: A System-Level Comparison of 810 nm and 1550 nm Bands	289
<i>Argiris Ntanos, Aristeidis Stathis, Panagiotis Kourelas, Athanasios D. Panagopoulos Hercules Avramopoulos, Giannis Giannoulis</i>	
SatSim - a LEO Visualisation and Simulation Tool	293
<i>Tobias James Tomkinson, Ulrich Speidel</i>	
Impact of Deep-Space Low-Energy Protons on the Optical Performance of Fused Silica Coated with Hafnium Oxide Thin Films	297
<i>Anna Sytchkova, Emilio Corte, Sabereh T. Rastkar, Elena Nieto Hernández</i>	
Implementation of the simplified BB84 protocol for the Q-ANSER mission	301
<i>A. Álvarez-Herrero, A. B. Balado Margeli, Á. Jimenez, D. Merino, M. Cebollero, P. Gallego, A. Núñez I. Muñoz, J. Pazos, D. Garranzo, A. Fernández-Medina, P. García Parejo, M. Silva-López R. López Heredero, A. Gonzalo, S. Pérez, L. Bastide, M. A. Alcacera, M. Pajas Sanz, A. Manjon A. Rodriguez Amor, M. Colombo, A. Santiago Pe, R. Canchal, C. Arza, C. Campuzano, D. Rusca, M. Curty</i>	
Optical terminal development for terrestrial laser links at UWA	305
<i>Benjamin Dix-Matthews, Lilani Toms-Hardman, Alex Frost, Nicolas Maron, Elrina Hartman Ayden McCann, Andrew Lance, Sabrina Slimani, Shane Walsh, Amrita Gill, Shawn Mcsorley, John Wallis Joshua Collier, David Gozzard, Sascha Schediwy</i>	
Preliminary results of a space-qualified polarization tracking system for QKD space systems using a genetic algorithm	308
<i>A. Jimenez-Girela, D. Merino-Perez, P. Garcia-Parejo, A. Crespo-Ramos, E. Gonzalez Del Campo D. Rodríguez de Llera González, A. Álvarez-Herrero</i>	
Validating the Satellite Tracking Strategy of the Singapore Optical Ground Station	312
<i>Abdillah Shaik, Moritz Mihm, Muskan Varshney, Ayesha Reezwana, Alexander Ling</i>	
COTS in Space: How Advances in High-Density Fiber Optic Connectivity are Handling Computing Challenges in Space	315
<i>Anders Thelin</i>	
Predictive Optical Feeder Link (OFL) Planning in Space-Ground Integrated Optical Networks (SGIONS) Using Bipartite Matching Algorithms	319
<i>H. Le Son, R. T. Schwarz, M. T. Knopp, L. F. Zarzalejo, B. Nouri, D. Gigenbach, A. Knopp</i>	
Complex Optical Components for Laser Communications	323
<i>David Harrison, Joanne Choi, Boris Shnapir, Evelyn Stull, Isabell Götz, Thomas Weber, Stefan Jakobs</i>	

HICALI-GATE: Testbeds of The Optical Ground Station in Japan	327
<i>Yoshihiko Saito, Takayuki Usami, Takuya Okura, Junichi Nakazono, Shigeo Hosono, Hiroyuki Tsuji</i>	
Monitoring of daytime turbulence in the ground layer with SHABAR profilers over eight locations, and analysis of performance and improvement of the C-DIMM nighttime turbulence monitor	331
<i>Frédéric Jabet, Marin Fouchier, Jean-Edouard Communal</i>	
High-precision cloud monitoring for Optimized FSOC Operation	333
<i>Guillaume Vialaneix, Guillaume Simon, Frederic Jabet, Jean-Edouard Communal</i>	
Transmitter Diversity Design Considerations for the EAGLE-1 QKD Optical Ground Station	336
<i>Niek Doelman, Stefan van der Linden, C. Willem Korevaar</i>	
Photonic Integrated Circuit Architecture and Modeling for Bidirectional Free-Space Optical Links with Independent Tx/Rx Beam Steering	340
<i>Paul Serra, Yekutiël Uliel, Eyal Wohlgenuth</i>	
SPPINN: Spiral Phase Plate Integrated Neural Network for High-Fidelity OAM Demultiplexing in Satellite-to-Ground Optical Links	349
<i>Harshit Tiwari, Miguel Ángel Vázquez, Satyendra Kumar Mishra</i>	
Coherent OQAM Optical Transmission using a Single Balanced Photodetector for High Sensitivity Satellite Optical Communication	357
<i>Young-Jin Hyun, Sang-Kook Han</i>	
Defocus-Aware Modeling and Control Analysis of a QD-Based Optical Tracking System: Experimental and Simulated Evaluation Using the DOLCE Terminal	361
<i>Hideki Takamoto, Kuna Shitara, Vinicius Ferreira Nery, Kazuki Takashima, Yuki Kusano</i>	
<i>Norihide Miyamura, Kota Kakiyama, Toshihiro Suzuki, Takayuki Hosonuma, Satoshi Ikari, Ryu Funase</i>	
<i>Shinichi Nakasuka</i>	
Z-Transform Model of a Coherent Receiver for Satellite-to-Ground Laser Links Under High Doppler Rates	370
<i>Sophie Pech, Fabien Destic, Arnaud Dion, Angélique Rissons</i>	
A Low SWaP-C Pointing and Tracking Architecture for Free Space Optical Communications between Aerial Platforms	380
<i>Martin Monaghan, Gerald M. Bonner, Gordon M. H. Flockhart, Craig Michie, Adam Selyem</i>	
Low Loss Free Space Optical Receivers Using low-order Adaptive Optics and Multi-mode Fibre Systems	390
<i>Emily van Hese, Niek Doelman</i>	
Pointing, Acquisition, and Tracking (PAT) for Optical Satellite Communications: Recent Trends and the ALIGN UK Mission's PAT Mechanism	395
<i>Rida Zia-Ul-Mustafa, Chris Graham, Elias Obreque, Richard Binns, Eamon Scullion, Robert Wicks</i>	
<i>James Martin, Amna Riaz, Nassima Khorchef, Jethro Vernon, Cyril Bourgenot</i>	
Optical Performance and Environmental Durability of Radiation-Resistant Polarization-Maintaining Er/Yb Co-Doped Fiber in High-Power Optical Amplifiers for Space Communications	405
<i>Hiroki Kobayashi, Masatoshi Mitaki, Ryoichi Nishimura, Hideo Shiratani, Kentaro Ichii, Yasutoshi Takada</i>	
Spaceborne demonstrator of High Power Wavelength Multiplexer for Very High Throughput Satellites Optical Communication	408
<i>Marco Casale, Florestan Luga, Vincent Pollier, Régis Grasser</i>	

Analysis and Design of an Integrated Compact RF Driving System for PIC-Based Hybrid AOM Phase Shifters for Free Space Optical Communication	415
<i>Jurgen Vanhamel, Samuel Dupont, Rudolf Saathof</i>	
Fabrication of SiC Mirrors Using Binder Jetting 3D Printing Technology	421
<i>Youngsuk Jung, Ji-Won Oh, Shinhu Cho</i>	
Assessing nonlinear effects in high-power optical amplifiers for WDM FSO communications up to 200 Gbps per channel	424
<i>Simon L��v��que, Ana��lle Maho, Laurent Bramerie, Mathilde Gay, Michel Sotom, Michel Joindot Thierry Chartier</i>	
A Validation Platform for Space Optical Communication Technologies via Ground Experiments	432
<i>Yuki Kusano, Vinicius Ferreira Nery, Kazuki Takashima, Kuna Shitara, Hideki Takamoto Norihide Miyamura, Kota Kakihara, Toshihiro Suzuki, Takayuki Hosonuma, Satoshi Ikari, Ryu Funase Shinichi Nakasuka</i>	
Integration of a Polarization based QKD Receiver Module to an Optical Ground Station	440
<i>R. Singh, T. Roger, C. Perumangatt, R. I. Woodward, O. Crampton, C. Simmons, A. Green, R. Donaldson R. S. Tessinari, R. M. Stevenson, A. J. Shields</i>	
Development of Space-Based Polarization Devices for Quantum Key Distribution Demonstration Missions	444
<i>Simon Turbide, Patrice C��t��, Nichola Desnoyers, M��lanie Leclerc, Marco St-Pierre</i>	
Design Priorities for Scalable and Robust QKD from Space to Ground	452
<i>Guillermo Mart��n-Romero, Pablo Arteaga-D��az, Andr��s Ru��z-Chamorro, Ver��nica Fern��ndez-M��rmol</i>	