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"5 Evaluation of Sail Mechanics of IKAROS on its Slow-spin and Reverse-spin Operation" "I. Introduction"; "II. Configuration of the Sail"; "III. Slow-spin Operation"; "IV. Numerical Analysis of the Shape of the Sail"; "V. Reverse-spin Operation"; "VI. Discussion"; "VII. Conclusion"; "References"; "6 Attitude and Orbit Prediction of IKAROS in Actual Flight Operation"; "I. Introduction"; "II. Characteristics of IKAROS"; "III. Search Operation"; "IV. Attitude Prediction"; "V. Orbit Prediction"; "VI. Results of Search Operation"; "VII. Analysis to Improve Trajectory Prediction"; "VIII. Summary"; "References"; "7 NanoSail a€? D Orbital and Attitude Dynamics"; "I. Introduction"; "II. Background"; "III. Analysis"; "IV. Models"; "V. Results"; "VI. Conclusions"; "References"; "8 Sunjammer : A Solar Sail Demonstration"; "Sunjammer Mission Overview"; "Deployment"; "Attitude Calibration"; "Thrust Calibration"; "Flyout and Other Extended Operations"; "References"; "9 Commercial Solar Sail Applications: Overview and Update on NASAa€™s Sunjammer Mission"; "I. About Sunjammer"; "II. About SSHI"; "III. Precursor Private Solar Sail Efforts"; "IV. SSHI and Sunjammer"; "V. Post Sunjammer Commercial Infusion Activities and Opportunities"; "VI. Conclusion"; "VII. References"; "10 The Preliminary Design of the GOSSAMER-1 Solar Sail Membrane and Manufacturing Strategies"; "I. Introduction"; "II. Sail Storage"; "III. Material Selection"; "IV. Membrane Design"; "V. Sail Membrane Manufacturing"; "VI. Conclusion"; "References"; "11 Demonstrator Flight Missions at the Surrey Space Centre involving Gossamer Sails"; "I. Introduction"; "II. CubeSail"; "III. DGOSS - Deployable Gossamer Sail for Deorbiting"

Sommario/riassunto

Hosted by the Advanced Space Concepts Laboratory within the department of Mechanical and Aerospace Engineering of the University of Strathclyde, the third International Symposium on Solar Sailing was held in McCance Building at 16 Richmond Street, Glasgow, between 11 and 13 June 2013. The symposium attracted over 90 delegates from 19 different countries, bringing together international experts from across the globe to discuss funded solar sail flight programs alongside on-going technology development and testing programs. The symposium also provided a forum for the discussion of enabling technologies, new application concepts, materials and structural concepts, space environmental effects, dynamics, navigation, control, and much more. This volume contains the unabridged symposium proceedings, in the gathered experts own words. As symposium chair, I thank our partners at Scottish Enterprise and L'Garde, Inc., the symposium's gold sponsor, for their support in realising this symposium.