

CALIGOLA: A pioneering LIDAR mission for Earth Sciences

Agenda

13 – 14 March 2025

Day 1 - 13 March 2025 (morning)

Introductory Session (from 9:30 to 12:30)

Chairperson: Simona Zoffoli

Francesco Longo (ASI) – Welcome and Introduction to the Workshop	9:30 - 9:45
Francesco Tataranni (ASI) – Overview of the CALIGOLA mission	9:45 - 10:15
Paolo Di Girolamo (UNIBAS-DiSS) – CALIGOLA: A pioneering LIDAR mission for Earth Sciences	10:15 - 10:45
Charles Trepte (NASA-LaRC) – CALIGOLA: societal benefits beyond the science community	10:45 - 11:05
<i>Coffee Break</i>	11:05 - 11:20
Tyler Thorsen (NASA-LaRC) – How a lidar sees the world	11:20 - 11:40
Valentina Sacchieri (Leonardo S.p.A.) – CALIGOLA Payload characteristics	11:40 - 12:10
Rosalia Santoleri (ASI) – CALIGOLA: research topics & scientific community involvement	12:10 - 12:30
<i>Lunch</i>	12:30 - 14:00

Day 1 - 13 March 2025 (afternoon)

Atmospheric Science and Application Session (from 14:00 to 17:00)

Chairperson: Paolo Di Girolamo

Rapporteur: Chris Hostetler (NASA -LaRC)

Tyler Thorsen (NASA-LaRC) - Session Introduction	14:00 - 14:20
Angela Benedetti (ECMWF) - <i>Invited contribution:</i> Assimilation of CALIGOLA data in weather forecast models	14:20 - 14:35 (on line)
Alcide Giorgio Di Sarra (ENEA) - CALIGOLA in the context of Climate Change	14:35 - 14:45
Simone Lolli (CNR-IMAA) - Global-scale measurements of the planetary boundary layer height from CALIPSO: lesson learned in view of next mission CALIGOLA	14:45 - 14:55
Stefano Corradini (INGV) - Volcanic ash cloud retrievals by integrating multispectral satellite measurements and CALIGOLA data	14:55 - 15:05
Daniele Perona (RSE) - Exploiting CALIGOLA data for improving solar spectral irradiance estimates	15:05 - 15:15
Gian Luigi Liberti (CNR-ISMAR) - Possible inputs to Cal/Val activities of CALIGOLA mission as contribution from EarthCARE experience	15:15 - 15:25
<i>Coffee Break</i>	15:25 - 15:40
Paolo Di Girolamo (UNIBAS-DiSS): Introduction to round table	15:40 - 15:55
Round Table on atmospheric topics Moderators: Paolo Di Girolamo (UNIBAS-DiSS),	15:55 - 17:00

Panelists: Gelsomina Pappalardo (CNR - IMAA), Alcide Giorgio di Sarra (ENEA-SSPT-CLIMAR-AOC), Angela Benedetti (ECMWF), Chris Hostetler (NASA -LaRC), Tyler Thorsen (NASA-LaRC)	
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Day 2 - 14 March 2025 (morning)

Oceanic Science and Application Session (from 9:30 to 12:30)

Chairperson: Rosalia Santoleri

Rapporteur: Davide Dionisi (CNR.ISMAR)

Davide Dionisi (CNR-ISMAR), Jhon Smith (NASA -LaRC) - Caligola ocean observation capabilities	9:30 - 9:50
Michael Behrenfeld (Oregon State University) – <i>Invited contribution:</i> The CALIGOLA mission: a deeper insight into the ocean	9:50 - 10:10
Marco Bellacicco (CNR-ISMAR) - Cal/Val Marine products	10:10 - 10:25
Valentina Raimondi (CNR IFAC) - Fluorescence LIDAR for the study of the marine environment	10:25 - 10:35
Kelsey Marie Bisson (Oregon State University) – Merging LiDAR and ocean color to advance understanding of ocean ecosystems	10:35 - 10:45
<i>Coffee Break</i>	10:45 - 11:15
Carlo Buontempo (ECMWF) – <i>Invited contribution:</i> Possible contribution of the CALIGOLA mission to the Copernicus Climate Service	11:15 - 11:30 (on line)
Rosalia Santoleri (ASI) – Introduction to round table	11:30 - 11:45
Round Table on ocean topics Moderator: Rosalia Santoleri (ASI) Panelists: Davide Dionisi (CNR-ISMAR), Michael Behrenfeld (Oregon State Univers.), Jhon Smith (NASA -LaRC), Marco Bellacicco (CNR-ISMAR), Kelsey Marie Bisson (Oregon State University), Valentina Raimondi (CNR IFAC)	11:45 - 12:30
<i>Lunch</i>	12:30 - 14:00

Day 2 - 14 March 2025 (afternoon)

Cryospheric and Terrestrial Science and Application Session (from 14:00 to 16:00)

Chairperson: Matteo Picchiani

Rapporteur: Michael Behrenfeld (Oregon State University)

Michael Behrenfeld (Oregon State University) - Introduction to round table	14:00 - 14:20
Yong Hu (NASA-LaRC) - Scientific and operational use of CALIGOLA mission: cryosphere	14:20 - 14:30 (on line)
Carlo Masetto (Veneto Region) - The use of CALIGOLA data to improve digital elevation models	14:30 - 14:40
Cristina Vittucci (Tor Vergata University) - Contribution of the satellite lidar mission CALIGOLA in multiscale forest monitoring approaches	14:50 - 15:00
Davide Morale (CMCC) - CALIGOLA monitoring of land elevation and vegetation structure to analyze topographic factors influencing climate conditions	15:00 - 15:10

Jennifer Johnson (University of Kansas) – <i>Invited contribution</i> : Disentangling structural versus functional controls on fluorescence from terrestrial vegetation with CALIGOLA	15:10 -15:20 (on line)
Rosalia Santoleri (ASI) – Introduction to round table on cryospheric and terrestrial topics	15:20 - 15:30
Round Table on cryospheric and terrestrial topics Moderator: Rosalia Santoleri (ASI) Panelists: Yong Hu (NASA-LaRC), Cristina Vittucci (Tor Vergata University), Davide Morale (CMCC)	15:30 - 16:00

Discussions and workshop conclusions (from 16:00 to 17:00)

Workshop wrap-up and concluding remarks Matteo Picchiani (ASI), Paolo Di Girolamo (UNIBAS-DiSS), Rosali Santoleri (ASI), Chris Hostetler (NASA -LaRC), Davide Dionisi (ISMAR), Michael Behrenfeld (Oregon State University), Jhon Smith (NASA -LaRC)	16:00 - 17:00
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