FINAL PROGRAMME

Day 1: WEDNESDAY 14 SEPTEMBER

Time	Plenary Session (AM) - *Aula*
9:30	**Welcome and Introduction**
9:45	**Keynote - Future Navigation Initiatives in ESA: The GENESIS Mission** *(Dr. J. Ventura-Traveset, ESA; Prof. Dr. M. Rothacher, ETH)*
10.30	**Keynote - Future Navigation Initiatives in ESA: The Moonlight Program** *(Dr. J. Ventura-Traveset, ESA)*
11:00	**Coffee Break (30')**
11:30	**Keynote - Lunar Reference Frames: Status and Future Perspectives** *(Prof. Agnès Fienga, Observatoire de la Cote d'Azur)*
12:15	**Keynote - GNSS monitoring of the environment in Bulgaria and Southeast Europe –** *(Prof. G. Guerova et al., University of Sofia St. Kliment Ohridski)*
13:00	**Lunch (60')**

Time	Session 1 (PM) - *Aula*	Session 2 (PM) – *Auditorium 243*
	Reference Frames and Precise Orbit Determination I *Co-Chairs: Prof. Urs Hugentobler - TUM* *Dr Erik Schoenemann - ESA*	**GNSS Atmosphere Sounding and Applications I** *Co-Chairs: Prof. Jens Wickert - GFZ* *Prof. Gunnar Elgered - Chalmers University of Technology*
14:00	ITRF2020: A new release of the International Terrestrial Reference Frame *(Zuheir Altamimi – Ign-ipgp France)*	Evaluation of Multi-GNSS real-time troposphere products *(Jan Douša – Research Institute of Geodesy, Topography and Cartography)*
14:20	VLBI observations to satellites: achievements and opportunities *(Johannes Böhm – TU Wien)*	Real-time troposphere monitoring using GPS, Galileo and low-cost GNSS receivers *(Tomasz Hadas – Wroclaw University of Environmental and Life Sciences)*
14:40	Integration of GNSS and SLR onboard Galileo *(Grzegorz Bury - Wroclaw University of Environmental And Life Sciences – upwr)*	Anomalies of hydrological cycle components during the 2007 heat wave in Bulgaria *(Biliana Mircheva – Sofia University)*
15:00	Non-Gravitational Force Models for One-Centimeter Orbit Determination of Galileo Spacecraft *(Dr. Florian Dilssner – ESA)*	Wet delay trends estimated from GPS-only and multi-GNSS compared to the corresponding trends from VLBI observations *(TONG Ning – Lantmäteriet)*
15:20	**Coffee Break (30')**	

	Reference Frames and Precise Orbit Determination II *Co-Chairs: Prof. Urs Hugentobler - TUM* *Dr Erik Schoenemann - ESA*	GNSS Atmosphere Sounding and Applications II *Co-Chairs: Prof. Jens Wickert - GFZ* *Prof. Gunnar Elgered - Chalmers University of Technology*
15:50	COPERNICUS Missions - Precise Orbit Determination *(Jaime Fernandez Sanchez – GMV Aerospace and Defence)*	GNSS Fog nowcasting demonstrator for Sofia *(Nikolay Penov – Sofia University "St. Kliment Ohridski")*
16:10	Comparison of GNSS-based scale realized by three methods *(Dr. Wen Huang – German Research Center For Geosciences GFZ)*	Combining GNSS and Instability Indices for derivation of classification functions in Southcentral Bulgaria *(Martin Slavchev – National Institute of Meteorology And Hydrology)*
16:30	Relative orbit determination with a LEO GPS receiver *(Uroš Kostić – Aalta Lab)*	Mediterranean cyclones and severe weather warnings in Bulgaria *(Stanislava Tsalova – Sofia University)*
16:50	Orbit Determination and Time Transfer in Selenodetic reference frames for a Lunar Radio Navigation System *(Cosimo Stallo – Thales Alenia Space)*	Trend of tropopause heights on global scale over 15 years by using GNSS Radio Occultation data *(Francesco Vespe – Agenzia Spaziale Italiana)*
17:20	**Poster Session and Welcome Reception (60')** *Co-Chairs: Prof. Jaume Sanz - UPC*	

Day 2: THURSDAY 15 SEPTEMBER

Time	Session 1 (PM) - *Aula*	Session 2 (PM) – *Auditorium 243*
	Navigation for Space Applications: Systems and Technologies I *Co-Chairs: Dr. Javier Ventura-Traveset - ESA* *Dr. Werner Enderle - ESA*	**Scientific Aspects of Positioning and Navigation Applications I** *Co-Chairs: Dr. Pawel Wielgosz - University of Warmia and Mazury* *Dr. Francisco González - ESA*
9:30	Positioning of a Lunar Surface Rover on the Southpole using LCNS and DEMs *(Floor Melman – ESA)*	A Novel Technique for Multipath Detection with BOC modulated GNSS signals *(Matthew Alcock – The University of Nottingham)*
9:50	An architecture for a lunar navigation system: orbit determination and time synchronization *(Mauro Di Benedetto – Sapienza Università di Roma)*	Observability analysis of the absolute orbit determination problem using inter-satellite range measurements between a MEO and a LEO satellite *(Miltiadis Chatzinikos – SYRTE, Observatoire De Paris-PSL, CNRS, Sorbonne Universitè, LNE)*
10:10	A methodology to improve the long-term estimation of GNSS clock corrections and phase biases using multi-frequency GNSS measurements *(Prof. Jaume Sanz – Universitat Politecnica de Catalunya)*	Determination of Galileo satellite orbit, clock offset and bias products for PPP-AR applications using all-frequency measurements *(Bingbing Duan – Technical University of Munich)*
10:30	Development of a Testbed for Moon Navigation *(Luca Canzian – Qascom)*	Accurate baseline calculation for MEO satellites to Support Science Missions *(Ramin Moradi – GMV NSL)*
10.50	Lunar landing performances using the Moonlight navigation service *(Pietro Giordano – ESA)*	Systematic Assessment of Simplistic Spoofing Effects on Modern Smartphones *(Akmal Rustamov – Politecnico Di Torino)*
11:10	**Coffee Break (30')**	

	Navigation for Space Applications: Systems and Technologies II *Co-Chairs*: Dr. Javier Ventura-Traveset - ESA Dr. Werner Enderle - ESA	Scientific Aspects of Positioning and Navigation Applications II *Co-Chairs*: Dr. Pawel Wielgosz - University of Warmia and Mazury Dr. Francisco González - ESA
11:40	NaviMoon: autonomous real-time navigation in Lunar orbit with Earth GNSS signals *(Michele Scotti – Spacepnt)*	Implementation and Test of a Low Cost GBAS Subset Airborne Receiver Experimental Platform for UAVs *(Kadir Atilla Toker – Ntnu, Norwegian University of Science and Technology)*
12:00	Galileo I/NAV+ Navigation Message Exploitation in Deep Space Applications *(Simone Tedesco – Qascom)*	Comparisons of the tropospheric parameters from multi-GNSS and numerical weather models for severe floods in Germany in July 2021 *(Karina Wilgan – Technische Universität Berlin)*
12:20	Feasibility study and simulation of an GNSS based Earth-Moon PNT system *(Dr Lei Yang – The University of Nottingham)*	System-specific signals in multi-GNSS Precise Point Positioning *(Radosław Zajdel – UPWr)*
12:40	Moon Sensor Station to support lunar PNT and science as part of Moonlight *(Richard Swinden – ESA)*	
13.00	**Lunch (60')**	

	Session 1 (PM) - *Aula*	
	Fundamental Physics I *Co-Chairs: Dr. Luis Mendes - ESA* *Paride Testani - ESA*	
14:00	GAlileo Survey of Transient Objects Network (GASTON) project: Searching for dark matter using the Galileo satellites *(Bruno Bertrand – Royal Observatory of Belgium)*	
14:20	A proposed network of Gamma-ray Burst detectors on the Global Navigation Satellite System Galileo *(Jochen Greiner – Max-Planck Institute for Extraterrestrial Physics)*	
14:40	The Galileo for Science (G4S_2.0) Project: Non-gravitational Perturbations Models and Precise Orbit Determination with SLR data *(David Lucchesi – National Institute for Astrophysics - INAF)*	
15:00	Clock effects in relativity (Dennis Philipp – Zarm, University Of Bremen)	
15:20	**Coffee Break (30')**	

		Fundamental Physics II *Co-Chairs: Dr. Luis Mendes - ESA* *Paride Testani - ESA*	
15:50	Verification of the Lense-Thirring and De Sitter effects using GNSS orbits *(Krzysztof Sośnica – Wrocław University of Environmental and Life Sciences)*	
16:10	A concept for testing the gravitomagnetic clock effect with Galileo satellites *(Jan Scheumann – Zarm, University of Bremen)*	
16:30	The Galileo for Science (G4S_2.0) Project: a new concept of accelerometer for future Galileo satellites *(David Lucchesi – National Institute for Astrophysics - INAF)*	
16:50	**Poster Session and Coffee (60')** <u>Co-Chairs</u>: Dr Vicente Navarro (ESA) Sara del Río (ESA)	

Day 3: FRIDAY 16 SEPTEMBER

Time	Session 1 (PM) - *Aula*	Session 2 (PM) – *Auditorium 243*
	Geodesy, Geophysics and Earth Sciences I Co-Chairs: Prof. Markus Rothacher - ETH Dr. Jan Douša - Geodetic Observatory Pecny	**GNSS Science Transversal Aspects** *Co-Chairs: Prof. René Jr. Landry - École de technologie supérieure* *Prof. Asparuh Kamburov - University of Mining and Geology Sofia*
9:00	Spaceborne GNSS Reflectometry: Breaking new ground in Earth Observation *(Milad Asgarimehr – German Research Centre for Geosciences GFZ)*	ESA GNSS Science Support in Operation: A Powerful Door for the Scientific Community *(Jesus Cegarra – Gmv Aerospace And Defence)*
9:20	Comparison of four different GNSS antenna installations using estimated atmospheric gradients and microwave radiometry *(Gunnar Elgered – Chalmers University of Technology)*	Indirect solar EUV flux rate measurement and flares warning with GNSS and potential extension to extra-solar sources (GNSS Astronomy) *(Manuel Hernández-pajares – Universitat Politècnica de Catalunya - UPC)*
9:40	Tropospheric errors in ground-based GNSS interferometric reflectometry: experimental validation with multiple antennas *(Peng Feng - Chalmers University of Technology)*	GSSC Now: ESA GNSS Thematic Exploitation Platform for Data Science Innovation *(Vicente Navarro – ESA)*
10:00	GNSS storm nowcasting demonstrator for Bulgaria *(Guergana Guerova – Sofia University "St. Kliment Ohridski")*	Demonstration of a quantum pseudorange *(Ricardo Píriz – GMV)*
10:20	Exploring Crowdsourced GNSS Observations for Data Fusion with the Use of Machine Learning *(Grzegorz Kłopotek – ETH Zürich)*	Prototype design, implementation and performance analysis of a next generation CORS station based on IF-recording *(Dr Lei Yang – The University of Nottingham)*
10:40	**Coffee Break (20')**	

	Geodesy, Geophysics and Earth Sciences II *Co-Chairs: Prof. Markus Rothacher - ETH* *Dr. Jan Douša - Geodetic Observatory Pecny*	Time and Frequency Transfer, Timing Aspects, Frequency Standards and Clock Technologies *Co-Chairs: Dr Felicitas Arias* *Prof. Gaetano Mileti (University of Neuchâtel)*
11:00	Dual frequency L1/L5 reflectometry airborne campaign with SAFIRE aircraft, early Carrier Phase Altimetry results *(Laurent Lestarquit – CNES)*	LEMAC: Design and studies towards miniature Rb atomic clocks in continuous wave and Ramsey-mode *(Etienne Batori – Université De Neuchâtel)*
11:20	Validation of ionospheric delay correction models for Galileo and GPS in single-frequency GNSS navigation *(MSc Beata Milanowska – University of Warmia and Mazury in Olsztyn)*	Optical Fibre Link for UTC(IT) Traceability at 1000 km *(Dr. Ilaria Sesia – Inrim)*
11:40	METRIC: a mission concept for upper atmosphere mapping, gravitational physics and geodesy *(Roberto Peron – INAF)*	Feasibility study on OneWeb Timing Service *(Dr Jaz Hill-Valler - Satellite Applications Catapult)*
12:00	Contribution of the Galileo System to Space Geodesy *(Krzysztof Sośnica - Wrocław University Of Environmental And Life Sciences)*	Hot Vapor Optical Clock for chip-scale and high-performance space applications *(Sylvain Karlen – CSEM SA)*
12:20	HydroGNSS Scout Mission – Using GNSS Signals for Climate Variable Sensing *(Martin Unwin – SSTL)*	GNSS Time Transfer Using High-Gain Antennas *(Esteban Garbin – GMV)*
12:40	**Best Presentation Award and Closing Remarks**	