Third Swarm Science Meeting

		Programme	v2 12 Jun 2014	
Day 1	**19 Jun 2014**			
08:00	**—>**	**Registration & coffee**		
		Session 0A: Operations, instruments and ground segment	*Chair: Rune Floberghagen*	
09:00	**09:20**	Flight operations of the Swarm constellation	Frank Diekmann	
09:20	**09:40**	Payload data ground segment - engineering and service to users	Pascal Gilles	
09:40	**10:00**	Cluster Special Operations in Support of Swarm	Arnaud Masson	
10:00	**10:20**	Swarm+ and the Living Planet Fellowship: opportunities for the Swarm community	Diego Fernandez	
10:20	**10:45**	**Coffee break**		
		Opening session	*Chairs: Eigil Friis-Christensen & Rune Floberghagen*	
10:45	**10:55**	Welcome address by the Minister of Higher Education and Science	Sofie Carsten Nielsen	
10:55	**11:05**	Welcome address by ESA's Director of Earth Observation Programmes	Volker Liebig	
11:05	**11:15**	Welcome address by the President of the Technical University of Denmark	Anders Overgaard Bjarklev	
11:15	**11:35**	Swarm science: physical background and open questions	Andy Jackson	
11:35	**11:55**	The Swarm mission and its status seven months after launch	Roger Haagmans & Rune Floberghagen	
11:55	**12:25**	From core to space: first Swarm science results	Nils Olsen & Claudia Stolle	
		Lunch		
		Session 1: Internal fields	*Chair: Gauthier Hulot*	
14:00	**14:20**	Use of Swarm data in an Update of the CHAOS-4 Field Model	Chris Finlay	
14:20	**14:40**	Crustal magnetic field mapping from CHAMP to Swarm	Stefan Maus	
14:40	**15:00**	Estimating the Magnetic Susceptibility of Terrestrial Crust of Continental Affinity	Mike Purucker	
15:00	**15:20**	Rapid core field variations just before Swarm	Arnaud Chulliat	
		Session 2A: External fields	*Chair: Igino Coco*	
15:40	**16:10**	Swarm EFI Overview and Science Highlights	David Knudsen	
16:10	**16:30**	**Coffee break**		
16:30	**16:50**	3D Structure and Global Distribution of Small-scale Currents in the Ionosphere Generated by the Acoustic-Gravity Waves from Lower Atmosphere	Toshihiko Iyemori	
16:50	**17:10**	Optical Aurora During Swarm Over-flights of Western Canada	Brian Jackel	
17:10	**17:30**	Low-latitude Plasma Blobs in the Topside Ionosphere as Observed by the Swarm Satellites	Jaehung Park	
17:30	**17:50**	Atmosphere-Ionosphere Wave Coupling as Revealed in Plasma Densities and Drifts	Jeff Forbes	
17:50	**18:10**	Swarm Observations of Low-Altitude Cusp Ion Upflow	Johnathan Burchill	
18:10	**18:30**	Swarm Equatorial Electric Field Inversion Chain	Patrick Alken	
18:30	**20:00**	**First poster session (with refreshments)**		
20:00	**late**	**Dinner**		

Day 2	**20 Jun 2014**			
		Session 0B: Operations, instruments and ground segment	*Chair: Roger Haagmans*	
09:00	**09:20**	The Swarm Vector Field Magnetometer: instrument commissioning and performance assessment	Jose Merayo	
09:20	**09:40**	Inter-satellite assessment of nominal (scalar) 1 Hz Level 1b ASM data	Pierre Vigneron	
09:40	**10:00**	On the possibility of using Swarm's Absolute Scalar Magnetometer experimental vector field measurements to produce alternative geomagnetic field models and North East Centre vector data	Gauthier Hulot	
10:00	**10:20**	On the in-flight calibration of the experimental absolute scalar magnetometer vector mode on board the swarm satellites	Jean-Michel Leger	
10:20	**10:40**	The Swarm Advanced Stellar Compass	John Leif Jørgensen	
		Coffee break		
		Session 3: Geodesy and accelerometry	*Chair: Christian Siemes*	
11:00	**11:20**	Introduction to geodesy & accelerometry with Swarm	Christian Siemes & the ACC QWG	
11:20	**11:40**	First look at thermosphere density results from the Swarm Level 2 accelerometer data processing chain	Eelco Doornbos	
11:40	**12:00**	Precise Science Orbits for the Swarm Satellite Constellation	José van den IJssel	
12:00	**13:00**	**Second poster session (with refreshments)**		
		Lunch		
		Session 2B: External fields	*Chair: Igino Coco*	
13:45	**14:00**	Maps of Ionospheric Conductances, Currents, and Convection from the Swarm Multi-Satellite Mission	Olaf Amm	
14:00	**14:15**	Swarm-Cluster Coordination: the Ring Current, Cusp and Adjacent FACs	Malcolm Dunlop	
14:15	**14:30**	Characteristics of the Field-Aligned Current System	Jesper Gjerløv	
14:30	**14:45**	Auroral Electrodynamics with Swarm	Octav Marghitu	
14:45	**15:00**	Magnetospheric ULF Wave Observations with the Swarm Mission	George Balasis	
15:00	**15:15**	Electron density variation in the South Atlantic anomaly	Stephan Buchert	
15:15	**15:30**	**Coffee break**		
		Session 4: Exploitation project plans and prospects	*Chair: Roger Haagmans*	
15:30	**15:45**	Chinese Geomagnetic Small Multi-satellite Mission	Aimin Du	
15:45	**16:00**	Core Surface Flows that Explain Rapid Observatory Secular Variation Changes	Kathy Whaler	
16:00	**16:15**	A Secular Variation Model for IGRF-12 Based on Swarm Data and Inverse Geodynamo Modelling: Methodological Backbone	Alexandre Fournier	
16:15	**16:30**	Inverse Geodynamo Modeling and Errors in Magnetic Field Observations	Erwan Thébault	
16:30	**16:45**	Satellite Magnetic Signal due to Ocean Tidal Flow. Sensitivity Analysis based on Global 3-D EM Simulations	Aleksey Kuvshinov	
16:45	**17:00**	Summary, discussion & wrap-up	Rune Floberghagen	
17:00		**Adjourn**		

3rd SWARM SCIENCE MEETING - POSTER LIST PER TOPIC

Topic: First science results

Title	Last Name	Company
Ion Thermalization at 500 km	Archer	University of Calgary
Forward Modeling of the Fennoscandian Lithospheric Field Using Spherical Prisms	Baykiev	Norwegian University of Science and Technology
Forecasting Secular Variation from CHAMP to Swarm	Beggan	British Geological Survey
Orbit and Gravity Field Solutions from Swarm GPS Observations - First Results	Dahle	GFZ German Research Centre for Geosciences
A new algorithm for rapid magnetospheric field modelling using Swarm data	Hamilton	British Geological Survey
Comparison of Gradient and FAC Estimation Techniques for Swarm	He	Jacobs University Bremen
ULF waves in the topside ionosphere	Heilig	Geological and Geophysical Institute
A New Approach for Receiver Bias Estimation and TEC Calibration for SWARM-GPS Paths	Hoque	German Aerospace Center (DLR)
Impact of early Swarm data on global magnetic field models	Macmillan	British Geological Survey
Evolution of Auroral Energy Dissipation Structures Determined Using Poynting Flux Measured by Swarm	Patrick	University of Calgary
Do We Need to Make Suborbital Measurements of the Magnetic Field?	Purucker	SGT at Planetary Geodynamics Lab, GSFC/NASA
Validation of Swarm Satellite Magnetic Data using Observatory Measurements	Ridley	British Geological Survey
A Magnetic Core Field Model Derived from Swarm Satellite Data	Rother	GFZ Potsdam
Energy Deposition in the Ionosphere Derived from LEO Satellite Observations	Stolle	GFZ Potsdam
Latitudinal and Apex Height Variations of Equatorial Plasma Irregularities as Observed by LEO Satellites and Jicamarca Radar	Xiong	Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences
Multi-Instrumental Study of Ionospheric Response to Geomagnetic Storms: Perspectives for SWARM Mission	Zakharenkova	IPGP, Paris

Topic: Mission status after the commissioning phase (satellites, instruments, operations, science data systems)

Title	Last Name	Company
Detecting Anomalies from Satellite and Ground Based Electromagnetic Data Using Data Analytics Approaches	Bi	Ulster University
Swarm's Absolute Scalar Magnetometer experimental vector field measurements: first conclusions from comparisons with 1 Hz nominal Swarm Level1b vector data	Brocco	IPGP
Combination of Swarm's Uncalibrated Accelerometer Data with POD-Based Accelerometry	Encarnacao	Delft University of Technology
Signals with Specific Frequency Detected by Champ Vector Magnetometer	Yin	Department of Space Physics, School of Electronic Information, Wuhan University
Swarm PDGS data access	Costa	ESA
Swarm data quality assurance	Ottavianelli	ESA
The Swarm Level 2 Category-2 products: Field-Aligned Current, Ionospheric Bubble Index, and Total Electron Content	Park	GFZ, German Research Centre for Geosciences

Topic: Plans for exploitation projects

Title	Last Name	Company
Modelling the Magnetic field of the Polar Electrojet	Aakjær	Technical University of Denmark, DTU Space
Field Aligned Currents in the Cusp: Research Opportunities with Swarm Mission	Bogdanova	Rutherford Appleton Laboratory, STFC, Harwell Oxford, Didcot, Oxfordshire, OX11 0QX
Electric, Magnetic and Ionospheric Survey of Seismically Active Regions with SWARM	Echim	Institute for Space Sciences Romania
Data Error Covariances for Satellite Magnetic Data	Finlay	DTU Space
Monitoring the plasmapause by SWARM	Heilig	Geological and Geophysical Institute
Geophysical Application of GOCE Gradients and SWARM Magnetic Data. Towards a Consistent 3D Lithospheric Model	Holzrichter	University Kiel
An Equivalent Source Method for Modelling the Global Lithospheric Magnetic Field	Kother	DTU Space
Estimating Swarm Magnetic Field Gradients for an Enhanced Determination of the Earth's Lithospheric Field.	Kotsiaros	DTU Space
What is the Appropriate Coordinate System for Magnetometer Data when Analyzing Ionospheric Currents?	Laundal	Universiy of Bergen
On the Applicability of Backus' Mantle Filter Theory	Pinheiro	Observatório Nacional / LPGNantes

New constraints on Earth's Radial Conductivity Structure	Puethe	ETH Zurich
A Pre-Swarm 3-D Mantle Conductivity Model, Derived With the Q-matrix Approach	Puethe	ETH Zurich
A Global Estimate of the Earth's Magnetic Crustal Thickness	Vervelidou	GFZ German Research Centre For Geosciences
Modelling of the Ionosphere and Plasmasphere with SWARM	Gerzen	German Aerospace Center (DLR)
Monitoring auroral electrojets - a possible Swarm near real-time space weather application	Vennerstrom	DTU Space

Topic: Presentation of the outcome of the Cal/Val activities

Title	Last Name	Company
The Time-Frequency Analysis (TFA) Tool: a Wavelet-Based Set of Tools Capable for Automated Detection of Artificial and Natural Signals in the Magnetic and Electric Field	Balasis	National Observatory of Athens
Early results from Swarm's Absolute Scalar Magnetometers burst mode	Crespo Grau	IPGP
Comparison of Low Earth Orbit Magnetometer Data	Knipp	University of Colorado Boulder
CM5: A pre-Swarm magnetic field model based upon the comprehensive modeling approach	Sabaka	NASA
First Investigations on Swarm Level 1a Accelerometer and Star Tracker Performances	Schack	Technische Universität München

Topic: Presentation of user projects and their initial results

Title	Last Name	Company
Data Assimilation into a Model of Earth's Core Rapid Dynamics	Canet	ETH Zurich
Toward a New Swarm-Based Global Electromagnetic Picture: Results from the Simultaneous Use of Ørsted and CHAMP Data	Civet	LPGNantes - CNRS - UMR 6112
The Role of the Magnetic Field Hemispheric Asymmetry for the High-latitude Plasma Drifts and Upper Atmosphere Neutral Winds	Foerster	GFZ German Research Centre for Geosciences
Stochastic Forecast of the Geomagnetic Field	Gillet	ISTerre
Monitoring of Intermittent Magnetic Fluctuations along the Orbit of the SWARM Spacecraft	Kovacs	Geological and Geophysical Institute of Hungary
Separating Internal and External Contributions to the Magnetic Field Using Harmonic Splines	Lesur	GFZ
Swarm and Van Allen Probes Conjunction Observations of EMIC Waves and their Effects on O+ density Enhancement in Inner Magnetosphere	Nose	Kyoto University
Attempt to Use the Stratospheric Balloon Gradient Magnetic Data for Verification of the SWARM Data	Philippov	IZMIRAN
Altitude Vector Slepian Functions and Satellite Crustal Magnetic Field Data: First Examples	Plattner	Princeton University / CSU Fresno
The Sources of the Bangui and West Africa Magnetic Field Anomalies Constrained by Satellite Data and Rock Magnetism	Quesnel	Aix-Marseille University
New Ideas for Swarm Data Selection and Visualization - Introduction of ESA Technology Study VirES	Triebnig	EOX IT Services GmbH
Positive Definite 2D Maps of Ionospheric Conductances Derived from Swarm Electric and Magnetic Measurements	Vanhamaki	University of Oulu and Finnish Meteorological Institute
Determination of 3-D Mantle Conductivity from the CM5 Dataset	Velímský	Charles University in Prague
Magnetic Signatures of Barotropic and Baroclinic Ocean Flows in Swarm Data	Velímský	Charles University in Prague
Forcasts of Geomagnetic Secular Variation	Wardinski	GFZ Potsdam
The Comparison and Cross-validation in Plasma Parameters among Different Electromagnetic Satellites	Zhang	Institute of Earthquake Science, CEA
Preliminary Validation of Swarm Anomalies with Magsat and CHAMP-Simulated Swarm Anomalies using CHAMP as a Proxy.	Taylor	NASA/GSFC
On the high frequency variations of the main Earth's magnetic field screened out by the electrically conducting lower mantle	Jault	ISTerre/CNRS