

**Workshop on TLE's and TGF's,
topical meeting of E-CANES, ASIM and TARANIS,
Amsterdam, October 25-27(28), 2010**
(program planning as of Sept. 30)

A webpage for scientific program, registration, hotel and travel instructions is set up on <http://www.cwi.nl/en/node/2614> and will be updated regularly.

Organizational support and meeting rooms will be supplied by CWI, www.cwi.nl, and by secretary Martine, M.Anholt.Gunzeln@cwi.nl.

Dinner places:

Sun, Oct. 24 at Hotel Casa400 where most participants stay.

Mon, Oct. 25 at Café Restaurant de Ponteneur, Eerste van Swindenstraat 581

Tue, Oct. 26 organized conference dinner in the inner city
at Restaurant Hemelse Modder, Oude Waal 11

Wed, Oct. 27 at Boulevard Café, Cruquiusweg 3

Overview scientific program:

Mon, Oct. 25

Balloon and aircraft experiments related to TLEs and space missions, TGF
Convenors: Christian Hanuise, Nikolai Østgaard, Jean-Baptiste Renard

Tue, Oct. 26

Observations and ground based facilities
Convenor: Torsten Neubert

Wed, Oct. 27

Laboratory experiments and modeling of streamers, sprite simulations
Convenors: Ute Ebert, Alejandro Luque, Sander Nijdam, Chao Li

Thu, Oct. 28

Visit of the experimental facilities at the departments of Applied Physics and Electric Engineering of **Eindhoven University of Technology** for interested participants.

(We recommend you to stay in your hotel in Amsterdam and to travel to Eindhoven by direct train within 80 minutes, thus avoiding traffic jams.)

Scientific program

Monday, October 25:

Balloon and aircraft experiments related to TLEs and space missions, TGFs

Convenors: Christian Hanuise, Nikolai Østgaard, Jean-Baptiste Renard

09:30 – 10:10

Nikolai Østgaard, Jean-Louis Pinçon: ASIM and TARANIS capability for detection of TGF

10:10-10:30

J. Fishman: Latest space-born observations of TGFs from Fermi-GBM

coffee

11:00 – 11:20

M. Marisaldi: Location of TGFs at high energy: Results from AGILE

11:20 – 11:40

N. Østgaard: Interest of TGF detection from balloon and aircraft altitudes

11:40 – 12:00

B. Carlson: Modeling of TGF production and observation

12:00 – 12:40

C. Li, O. Chanrion: discussion of the Dutch and the Danish simulations of run-away electrons and hard radiation from streamers and sprites

lunch

14:00 – 14:20

L. Van Deursen: HiSparc observation of thunderstorm

14:20 – 14:40

H. Christian: aircraft / balloon observations above thunderclouds

14:40 – 15:00

M. Cherry: Ground-based array and balloon experiment

coffee

15:30 – 15:50

E. Seran and M. Godefroy: EF-ATLEC balloon multi-instruments experiment: electric field and optical observations in stratosphere

15:50 – 16:10

COBRAT scientific objectives (Jean-Baptiste)

16:10 – 18:00

Discussion :

- Definition of COBRAT payload
- Associated ground-based observations

(participation of S. Soula and others)

Tuesday, October 26:

Observations and ground based facilities

Convenor: Torsten Neubert

SCIENCE (20 minutes per speaker: 10 minutes talk + 10 minutes discussion, start at 9:30)

1. Oscar van der Velde: *EuroSprite* 2009-2010 instruments overview
2. Enrico Arnone: *EuroSprite* 2009-2010 observations overview
3. Martin Füllekrug: Radio Remote Sensing of Sprites
4. Oscar van der Velde: High-Speed Imaging of lightning
5. Yoav Yair: Ground-based measurements in Eastern Mediterranean winter thunderstorms
6. Samir Nait Amor: The AWESOME network for the ASIM and TARANIS missions
7. Torsten Neubert: The Italian GJ - The electric potential distribution
8. Serge Soula: Gigantic Jets observed over an isolated tropical storm in La Réunion region
9. Hans Stenbaek-Nielsen: Observations of streamer initiation in sprite halos
10. Matthew McHarg: Telescopic high speed observations of sprites
11. Steve Cummer: Recent observations of TGFs, TLEs, and associated lightning

NEW DIRECTIONS AND NEW OPPORTUNITIES

1. Plans for new instrumentation and collaborations
 - a. Oscar and Francisco: Spain/South America
 - b. Yoav Yair: Israel
 - c. Olivier: Denmark/India/Cuba
 - d. Serge/Île de la Réunion
 - e. Martin Füllekrug: Radio receiver array in southern Europe
 - f. Steve Cummer: USA

PROGRAMMATICS

1. Identification of topics for future joint publications
 - a. All
2. Agree on common event format
 - a. All
3. Update and use of electricstorms.net
 - a. All
4. Communication and coordination of campaigns
 - a. All
5. Access and use of data policy
 - a. All

Wednesday, October 27

Laboratory experiments and modeling of streamers, sprite simulations

Convenors: Ute Ebert, Alejandro Luque, Sander Nijdam, Chao Li

All talks are 15 minutes + 5 min discussion to keep time for exchange and collaboration. 5 minutes presentation and 15 minutes discussion are welcome as well, and everything in between!

9:30-10:30 Streamer experiments:

Sander Nijdam, streamer experiments

Daria Dubrovin, sprites on other planets and related experiments

Guus Pemen, corona streamers, radical and UV-production and applications

coffee

11:00-12:00 Streamer simulations:

Sasa Dujko, Theoretical foundations, numerical techniques and applications of transport coefficients in modeling of streamers and sprites.

Gideon Wormeester, streamer modeling in different gases

Ute Ebert, Electrodynamic characterization of streamers and streamer tree models

lunch

14:00-15:00 Sprite simulations:

Alejandro Luque, Models of sprites and halos with a gradient of air density

Ningyu Liu, Sprite modeling

Francisco Gordillo-Vazquez, Modeling of N₂B and N₂C vibrational distribution functions in sprites at different altitudes and temporal resolutions

coffee

15:30-16:10 Hard radiation from streamers and leaders and TGF – experiments:

Vuong Nguyen, hard radiation from streamer-leader discharges in the lab

Irfan Kuvvetli, ASIM-CZT detector measurements of hard radiation from TU Eindhoven discharges. Preliminary results and plans.

Thursday, October 28

Lab visits at Eindhoven University of Technology

(80 minutes direct train + 10 minutes walk from Amsterdam CS, 4 trains/hour, there are direct trains from Eindhoven CS to Schiphol airport)

To be seen at Dept. Electrical Engineering (Lex van Deursen, Guus Pemen et al.):

- MV facility for experiments on gamma emission from long sparks
- several pulsed corona platforms for investigations on streamers and their application for air/(hot)gas/water conditioning
- surface dielectric barrier discharge for medical applications
- microplasma system for (maskless) plasma-patterning on substrates/films..
- equipment for nanosecond pulsed electric field generation for manipulation of biological cells and tissues

at Dept. Applied Physics (Eddie van Veldhuizen, Sander Nijdam et al.):

- Pulsed corona set-up for fundamental streamer studies
If there is interest, also:
- Passive and active spectroscopy on pulsed corona's
- Two photon atomic laser induced fluorescence (TALIF)
- Thomson scattering on various plasma sources
- Plasma's for medical applications