



Centrum Wiskunde & Informatica

To

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Scientific report on my visit in Granada during March 14-23

Dear colleagues, dear Anne-Sophie Gablin,

Last October, I had applied for a visit of 5 days to Dr. Alejandro Luque. Dr. Luque spent an exceptionally productive postdoc time in my group in 2005-2008. Meanwhile he has got a tenure track position in Granada. The work of my group and his work in his new scientific environment takes different directions, but is so close that collaboration continues to be extremely fruitful. In the course of the winter, we therefore decided to extend the visit to 10 days due to the many pending problems we wanted to discuss and push forward.

We worked on the following papers that were pending too long due to lacking direct communication, but that are still highly relevant:

- V. Rathushnaya, A. Luque, U. Ebert, *Electrodynamic characterization of streamers*, to be submitted to J. Phys. D: Appl. Phys.
- A. Luque, U. Ebert, L. Schäfer, *Secondary streamers: Why current carrying discharges approach the breakdown field*, to be submitted to Phys. Rev. Lett.
- A. Luque, U. Ebert, *A parameter study of sprite inception from the ionosphere*, to be submitted to J. Geophys. Res.

All three papers will acknowledge ESF.

Furthermore, we had a very fruitful exchange of ideas, literature studies and results on

- Tree models for multiple streamer processes in sprites, streamer corona's of leaders and in plasma technology
- Chemical reactions in the trail of sprite streamers and in plasma technology

The last two topics might lead to future collaboration between my PhD students and myself and the group in Granada.

Best regards,

Prof. Dr. Ute Ebert