

AEM012-01

Room: 202

Time: May 28 09:00-09:15

Sprite discharges on earth and other planets: experiments and theory

Ute Ebert^{1*}, Tanja Briels², Daria Dubrovin³, Yukihiro Goto⁶, Chao Li¹, Alejandro Luque¹, Sander Nijdam², Colin Price³, Yukihiro Takahashi⁶, Eddie van Veldhuizen², Yoav Yair⁴, Roy Yaniv⁴

¹CWI Amsterdam, The Netherlands, ²Eindhoven Univ. Techn., The Netherlands, ³Tel Aviv University, Israel, ⁴Open University Raanana, Israel, ⁵Tohoku Univ., Sendai, Japan, ⁶Tohoku Gakuin University, Tagajo, Japan

It is by now well understood that large sprite discharges at the low air densities of the mesosphere are physically similar to small streamer discharges in air at standard temperature and pressure. I will briefly discuss the underlying Townsend similarity laws and their range of validity as well as their experimental verification. The similarity laws open the way to investigate sprites on earth and on other planets in the lab. I will review relevant recent experimental and theoretical results.

Keywords: sprite discharges, transient luminous events, streamer discharges