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**TERAMOBILE: Contribution to laser-induced lightning studies** — ●R. BOURAYOU<sup>1</sup>, R. SAUERBREY<sup>1</sup>, M. RODRIGUEZ<sup>2</sup>, H. WILLE<sup>2</sup>, K. STELMASZCZYK<sup>2</sup>, L. WÖSTE<sup>2</sup>, J. KASPARIAN<sup>3</sup>, E. SALMON<sup>3</sup>, G. MÉJEAN<sup>3</sup>, J. YU<sup>3</sup>, J-P. WOLF<sup>3</sup>, Y-B. ANDRÉ<sup>4</sup>, and A. MYSYROWICZ<sup>4</sup> for the Institut für Elektrische Energietechnik, TU Berlin collaboration and the CEAT-DGA Toulouse, France collaboration — <sup>1</sup>IOQ, F.-Schiller-Universität Jena — <sup>2</sup>IfE, Freie Universität Berlin — <sup>3</sup>LASIM, Université Claude Bernard Lyon 1, Villeurbanne, France — <sup>4</sup>LOA, ENSTA Palaiseau, France

Lightning causes damages and casualties as a dramatic expression of atmospheric electricity having uncontrolled occurrence. Trials to trigger and guide them have been attempted for years and laboratory experiments, by scaling down the event, helped fulfilling empirical and theoretical understanding.

Great expectations arose with the availability of lasers to produce a preferential path for the free-propagating electrons preceding the discharge. We report such experiments gathered from the literature, but also results from our experiments with the Teramobile system. The latter, encompassing detection devices and the first mobile terawatt femtosecond laser, was carried to high-voltage test halls in TU Berlin (D) and CEAT (F). The ability of a laser self-induced plasma channel (so-called filament) was evaluated for triggering and guiding electric discharges over several meters. Tests were oriented to bring an insight to the application of such a system to divert real lightnings during outdoor experiments.

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