ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Abstract

Roy Daher, "Study of Upward Flashes Initiated at the Säntis Tower", 2017.

This project has the purpose of further understanding the mechanism of upward lightning ashes from tall structures. A data set of measurements from the Säntis tower in Switzerland is analysed in order to classify these upward discharges into two categories: self-triggered ashes, which are ashes where no preceding lightning activity in a xed radius around the tower and within a given time period before the tower ash is detected; and other-triggered ashes, where preceding events, under the same constraints, are detected. The results show that the majority of upward lightning discharges from the tower are initiated without any preceding activity. The eects of the choice of the time interval and the radius around the tower for the analysis are discussed. The results are compared to previous studies, and are correlated with meteorological conditions. The project also features a test of causality between other-triggered ashes and the preceding activity by examining post-tower ashes.