

**VAISALA**

ILDC/ILMC Strikes Again  
Network with lightning  
experts from around the world

April 27-30, 2020  
Broomfield, Colorado, USA

[www.vaisala.com/ILDC](http://www.vaisala.com/ILDC)



## **Cloud-to-Ground Lightning Activity in Colombia using the GLD360 Lightning Location System for the Period 2013-2018**

### **Authors**

Mr. Juan S. Fernandez - Universidad Distrital Francisco José de Caldas

Mr. Daniel Villamil - Universidad Distrital Francisco José de Caldas

Mr. Jiver A. Barreto - Universidad Distrital Francisco José de Caldas

Dr. Herbert E. Rojas - Universidad Distrital Francisco José de Caldas

Dr. Francisco Santamaria - Universidad Distrital Francisco José de Caldas

Mr. Ron Holle - Vaisala Inc.

Mr. William A. Brooks - Vaisala Inc.

### **Abstract**

This paper shows the ground flash density (GFD) in Colombia obtained from the data provided by the lightning location system GLD360 for the period 2013-2018. The performance, accuracy and efficiency of the GLD360 allow the creation of high-quality GFD maps by using Geographic Information System (GIS) tools used to locate every lightning flash. The annual behavior of the lightning activity is observed and analyzed during the period of study, taking into account both magnitude and location, as well as the date and hour of the day. Comparisons between geographical regions and monthly activity are made in order to determine spatial-temporal relations. This work is the first result obtained from the research agreement between Vaisala Inc.® and the Universidad Distrital Francisco José de Caldas (Bogotá, Colombia) whose main objective is the estimation of the lightning-fatality risk in the country.

Keywords— Colombia; lightning location system; GLD360; ground flash density; ground flash density maps

### **Topic Areas**

Lightning Detection Systems Technology and Performance, Lightning Detection from Space: Performance, Research and Applications

### **Submission Format**

Oral