

## **Characteristic analysis of lightning disaster in Hainan Island from 1999 to 2011**

Intended for “Lightning Hazards” Topic

Yi Gao (Lightning Protection Center of Hainan Province, No.60 Haifu Avenue, Haikou 570203, P.R.China; qjgaoyi@qq.com), Fangcong Zhou and Xiaoqing Lao

Characteristics of lightning disaster in Hainan Island from 1999 to 2011 are analyzed by using nationwide lightning disaster data, thunderstorm data, lightning location data, and statistical yearbook of Hainan Province.

The results show that 727 lightning disaster accidents are reported, which result in 405 casualties including 157 deaths and 248 injuries. Lightning casualty ratio is 1.58:1. The lightning disasters of Hainan Island mainly occur between 1:00pm and 6:00pm from April to September, which is in accord with lightning activity of Hainan Island. Haikou and Qiongzhou have the most lightning disaster accidents.

Lightning disaster with casualty usually occur in field, simple shed, rural residential, water area and under the tree in sequence. Lightning disaster with damages occur most frequently in the power, petrochemical industries and three others, which account for 22.2% of the lightning disaster with damage. The hotel accounted for the largest proportion (34.7%) of the direct economic losses caused by lightning disaster.

Lightning disaster with casualty and damage have no significant correlation with thunderstorm day, but lightning disaster with casualty and damage are positively correlated with life fragile module and economic vulnerability module.