

# Lightning activity in summer monsoon precipitation over Korean peninsula

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## Abstracts

Cloud-to ground lightning and total precipitation over Korean peninsula during the summer monsoon season are studied extensively with a special emphasis on the characteristics of convective precipitation. Ten years (1988-1997) lightning and rainfall data and a temporal and spatial scale of one month and  $10^2 \text{ km}^2$  respectively are used to calculate the monthly number of CG lightning flash count. Monsoonal convective activity is higher over the west coast with maxima at two different regions, one in the northern part which increases northwestward and the other is at the middle west coast of Korea increasing towards the west coast. East coast represents the minimum value of monsoonal convective activity. In the east coast of Korean peninsula, particularly in the region east of Tae-back mountain, the value of Rain yield, (which is defined as the ratio of total precipitation to CG flash count over a common area), is maximum with an average value of  $3 \times 10^8 \text{ kg fl}^{-1}$ , while the minimum value of rain yield is occurred in the west of Tae-back mountain, with an average value of  $0.8 \times 10^8 \text{ kg fl}^{-1}$ . Results show in the west coast stations, nearly 82 % of the total rainfall is convective in nature, at the middle of the peninsula 53 % of the total rain is convective while in the east coast stations 46 % contribution from the convective rain is seen. Kanghwa receives the maximum convective rain while at Ulsan the convective rain is minimum. Correlation coefficient between the total precipitation and CG lightning during the summer monsoon season is 0.54.