



A ten-year lightning climatology for the United States (1989-1998)

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Abstract

More than two hundred million cloud-to-ground lightning flashes have been recorded in the last ten years in the continental United States. We have the first decadal climate of lightning that reveals year-to-year variations, but also persistent features that repeat every year. Maximum flash densities occur in Florida, but also in the upper Midwest and over the Gulf Stream east of the Carolinas. Relative minimums in flash density are observed over the mountains in the west and over the Appalachian Mountains in the east. The dominant polarity of the charge brought to ground, termed negative and positive lightning, varies with the season and latitude. The positive flash density appears to be a function of geographic altitude, but the negative flash density is apparently not a function of geographic elevation. Explanations for these observations will be proposed.