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## Lightning: Principles, Instruments and Applications

### Review of Modern Lightning Research

Lightning represents a natural phenomenon of substantial interest. Due to its complex nature, research continues in many countries and reveals amazing results. Lightning is actively observed because of its relevance to Earth climate and air composition in addition to the classical aspects of related human fatalities and damage to forests, buildings, power lines, aircraft, structures and electronic devices. In this volume, the most important contemporary questions on lightning are addressed and analyzed under many experimental and theoretical aspects. Lightning detection techniques using ground-based and space-borne methods are described, along with network engineering and statistical analysis. Contributions detail research on atmospheric electricity, cloud physics, lightning physics, modeling of electrical storms and middle atmospheric events. Special phenomena such as triggered lightning and sprite observations are examined. Lightning-induced nitrogen oxides and their effects on atmospheric chemistry and climate are discussed. Each topic is presented by international experts in the field. Topics include: \* air chemistry \* convective storms \* infrasound from lightning \* lightning and climate change \* lightning and precipitation \*... more on <http://springer.com/978-1-4020-9078-3>

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- ▶ Experimental observations and theoretical explanations of lightning
- ▶ Importance of lightning in meteorology and atmospheric science
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