Cloud Optics

Clouds affect the climate of the Earth, and they are an important factor in the weather. Therefore, their radiative properties must be understood in great detail. This book summarizes current knowledge on cloud optical properties, for example their ability to absorb, transmit, and reflect light, which depends on the clouds' geometrical and microphysical characteristics such as sizes of droplets and crystals, their shapes, and structures. In addition, problems related to the image transfer through clouds and cloud remote sensing are addressed in this book in great detail. This book can be an important source of information on theoretical cloud optics for cloud physicists, meteorologists and optical engineers. All basic ideas of optics as related to scattering of light in clouds (e.g. Mie theory and radiative transfer) are considered in a self consistent way. Consequently, the book can also be a useful textbook to newcomers to the field.

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