



**CAMBRIDGE**  
UNIVERSITY PRESS

20% Discount *on this title*

Expires 31 December 2022

# Atmospheric Lidar Fundamentals

Laser Light Scattering from Atoms and Linear  
Molecules

**Chiao-Yao She**

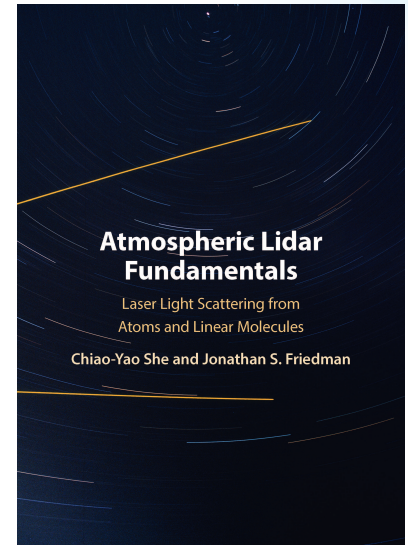
*Colorado State University*

**Jonathan S. Friedman**

*Universidad Ana G. Mendez*

Lidar is a remote sensing technique that employs laser beams to produce a high-resolution, four-dimensional probe, with important applications in atmospheric science. Suitable as a detailed reference or an advanced textbook for interdisciplinary courses, this book discusses the underlying principles of light-scattering theory and describes widely used lidar systems in current research, exploring how they can be employed effectively for atmospheric profiling. This self-contained text provides a solid grounding in the essential physics of light-matter interactions and the fundamentals of atmospheric lidars through a discussion of the principles that govern light-matter interactions and an exploration of both historical and recent scientific developments in lidar technology. This is an essential resource for physicists, optical engineers and other researchers in atmospheric science and remote sensing.

Forward; Preface; 1. Introduction; 2. Classical light scattering theory; 3. Semi-classical treatment of light absorption and scattering from atoms; 4. Rayleigh and Raman scattering from linear molecules; 5. Introduction to lidar remote sensing and the lidar equation; 6. Common (broadband) lidar types and associated applications; References; Index.



**February 2022**

244 x 170 mm c.400pp

Hardback 978-1-316-51823-6

<i>Original price</i>	<i>Discount price</i>
£110.00	£88.00
\$140.00	\$112.00



[www.cambridge.org/alerts](http://www.cambridge.org/alerts)

For the latest in your field

For more information, and to order, visit:

**[www.cambridge.org/9781316518236](http://www.cambridge.org/9781316518236)**

and enter the code SHE2022 at the checkout