



## Diode Laser Based High Spectral Resolution Lidar

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### The Invention

Lidar is an acronym for Light Detection And Ranging. The technology may be used to measure distance by illuminating a target with a laser beam and performing analysis on the reflected laser beam light. In the atmospheric sciences, Lidar may be used to study the optical depth of clouds, the impact of aerosols on clouds, and the interactions between aerosols and clouds on the climate. The present application proposes a lidar-based technology using a diode laser (101) beam sent through a tapered semiconductor optical amplifier (106) and an axicon pair expander (108) wherein the laser light may be transmitted through a telescope (110) at an object to be studied. Upon striking the object to be studied, the laser (101) is reflected and recovered by the telescope (110). The reflected laser is then sent through a heated rubidium vapor cell (115) and a total detection channel (116) for analysis.

#### Tech Fields

- [Analytical Instrumentation, Methods & Materials : Lasers](#)

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