

Broad-Line Pulsed Powerful Laser Diodes of NIR Band for Compact DIAL Scheme

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A new type of differential absorption lidar is developed that utilizes the properties of multi-chip-stack pulsed, broadband laser diode of microjoule energetic range. The laser wavelengths are tuned on/off a monitored integral resonance molecular absorption spectrum in the selected near-infrared band. The method is based on comprehensive theoretical analysis of molecular absorption implementing correlation spectroscopy and HITRAN high-resolution spectral database for remote sensing of atmospheric methane.

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