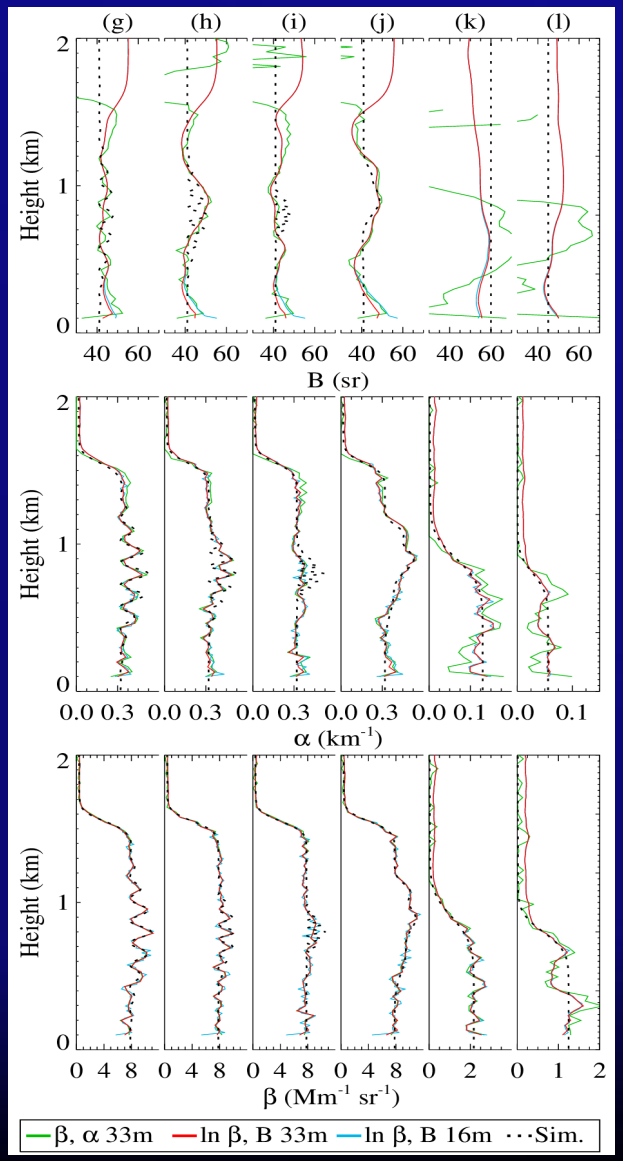
Retrieval of aerosol and volcanic ash properties from Raman lidar with optimal estimation



- Developed an optimal estimation retrieval from 2-channel lidar data
- Able to closely reproduce simulated data in a wide variety of circumstances
- Results equivalent to those of traditional Raman lidar techniques
- Includes a more rigorous error propagation

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- Technique applied to observations of Eyjafjallajökull ash from April 19, 2010
- Unusually low lidar ratios of 20-30 sr observed for a thin layer within the boundary layer