

# Development of a High Spectral Resolution Lidar for day-time measurements of aerosol extinction.

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Lidar technique is the most performing way to obtain the atmosphere vertical profile of aerosol optical properties with high space-time resolution. With conventional lidars, the retrieval of aerosol optical properties (as the extinction profile) is realizable only with assumptions on aerosol extinction-to-backscatter ratio or with Raman measurement achievable in night-time.

In order to overcome this problem, the High Spectral Resolution Lidar (HSRL) technique has been examined.

In this paper we present an innovative prototype of High Spectral Resolution Lidar realized at Physics Department of University "Federico II" of Naples for the LISA (Lidar for Space study of the Atmosphere) project in the framework of the China-Italy international cooperation between CNISM and BRIT. The prototype which represents a first step of a spaceborne HSRL, is based on a laser source at 1064nm and 532nm with high spectral resolution ability at 532nm. The separation between the molecular and the aerosol components was obtained through the use of a Fabry-Perot resonant confocal cavity.

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