

**Monitoring the Environmental Impact of Grain Storage in the Region Port of Santos by the Technical LIDAR**

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**Abstract:** The presence of particulate matter can alter the atmosphere significantly, these particles may have variable composition, and various organic and inorganic compounds, which reflects the different training modes of interaction thereof with the atmosphere and the particle lifetime in medium. The interaction of this material with the environment can have a big impact on the hydrological cycle of a given region, and the health of the resident population in the area. Brazil is a world leader in the production of grains, especially soybeans and corn. The city of Santos SP is home to the largest port in Latin America, through which all national grain production to be exported to the world. The city of Santos has constant monitoring of air quality where it detects the presence of several pollutants, including particulate matter, but only quantifies their presence. This project aims to monitor the presence of particulate material from the storage and transportation of grains in the port area of the city of Santos - SP, quantifying and assessing the impacts caused by it, analyzing its composition for possible generating sources, its form of dispersion and interaction with the environment, using the lidar technique In this project will be used a portable biaxial and articulated developed by Raymetrics Systems. The this LIDAR transmission system works with a laser commercial pulsed Nd: YAG laser, operating at wavelengths of 1054, 532 and 355 nm, and the pulse energy of 120 mJ at a rate of laser repetition of 20 Hz and the pulse width is 20 ns, giving the system a spatial resolution of 3.75 m. This equipment will be transported and operated into the storage area of grain, enabling real-time monitoring of generated plumes.

**Keywords:** Lidar system, Particulate material, Grain Storage.

**IXWLMLA Topic:** \_\_\_\_\_ (list of topics at <http://gescon.ipen.br/wlmla/>).

Observações da Nazaré: port, substituir por harbour

The city of Santos has been constantly monitoring the air quality

in this project it will be used. ..

The LIDAR transmission system. ..