

## **Atmospheric Profile of Porto Nacional-TO in the burning season and correlation with respiratory diseases**

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**Abstract:** The advance of Brazilian agricultural frontier to North, reaching the State of Tocantins, brought the economic development to the region, but also the environmental impact. Burnings are very used to clean the cerrado (Brazilian savanna) fields. This procedure increased, becoming visible and making people complain about health as the smoke interferes in the local atmosphere. The literature reports the influence of aerosols in the people health at other places for a long time ago. It can't be find this kind of investigation in the Tocantins' cerrado. As the lidar is a tool of unquestionable importance for the atmospheric analyses, it's indispensable its utilization to feature the burning impact on cerrado's atmosphere. Porto Nacional, a city distant 55 kilometers from the capital Palmas, was studied because it's included in the agricultural frontier. The city has also been growing due to the university implantation, including the medicine college, attracting students and researchers. Thus, the factors listed above stimulated this interdisciplinary master science work, adding to the study of atmosphere profile, the attemptive to co-relate the burnings to the admissions for respiratory diseases in the city's hospital, using the agreement between ITPAC-Porto and IPEN-USP.

**Keywords:** lidar; burning; health.

**IXWLMLA Topic:** Lidar applications in environmental sciences