

### **3.064 Study of the air quality in region impacted by emissions from thermoelectric power plants burning sugarcane bagasse in Brazil.**

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Abstract:

Brazil is the largest global producer of sugar and ethanol from sugarcane. Ethanol and sugar production generates an excessive amount of bagasse, which is almost all used to generation electricity in thermoelectric power plants, which is approximately of 9.7 GW. The State of São Paulo, region focus of this study, accounts over 60% of the country's production, occupying approximately half of its area with the cultivation of sugarcane and more than 197 thermoelectric plants burning sugarcane bagasse. Thus, the aim of this study is to evaluate the impact of the pollutants emitted by power plants, which used sugarcane bagasse as fuel, in the region of São Paulo state, which concentrates a large number of power plants, using the model Weather Research and Forecasting with Chemistry. The center of grid is -21.15 and -48.98 with 200 x 150 grid cells and 3 km of horizontal resolution. Preliminary results of the study indicate a significant contribution of this source in air quality in the region, overcoming the contribution of vehicle emissions, mainly for particles and nitrogen oxides pollutants. Moreover, it can be observed the influence of the particles plume in completely South-Southeastern of Brazil. Therefore, the emission from this sector could not be neglected in the regional air quality modeling as well for evaluation of air quality of this area, although are not available inventory for industrial sources in Brazil.