

**REGIONAL DISPERSION OF SO<sub>2</sub> IN CENTRAL CHILE: EVOLUTION OF IMPACTS****H. Jorquera, J. Castro***Ingeniería Química Y Bioprocesos/Pontificia Universidad Católica De Chile, Santiago, Chile*

Chile is one of the leading copper exporting countries worldwide. The largest copper smelter, Caletones, located some 80 km south of the country's capital, Santiago, was responsible for 0.4% of about 70 Tg S/yr oxidized sulfur (SO<sub>x</sub>) emitted by anthropogenic sources worldwide in 2000. Santiago, with a population of 5.7 million inhabitants, emitted only about 5Gg S/yr in 2000. Santiago is surrounded by significant agricultural activities, especially vineyards. All large sources in Chile must bring their ambient SO<sub>2</sub> impacts below the current national ambient air quality standards. These sources have been subject to emission abatement processes; success in these initiatives has been verified by comparison with limited ambient monitoring of SO<sub>2</sub>, that is, only near the major sources. In addition, the city of Santiago has experienced a significant fuel shift to compressed natural gas in industrial, commercial and residential sources. This has effected an improvement in ambient SO<sub>2</sub> impacts within the city limits as well. We have applied advanced air quality modeling tools to assess the expected improvements in air quality and to verify the reliability of the available emission inventories under rapidly changing emission scenarios between 1997 and 2004. We use the Comprehensive Air Quality Model with Extensions (CAMx) to explore, at the regional and urban scale the spatial and temporal extent of SO<sub>2</sub> pollution in central Chile. We focus on the magnitude of the impacts on urban areas and also on agricultural areas that surround Santiago.