

Scientific Basis

Long-Term Changes of Acidic Gases in China's Yangtze Delta and Northeast Plain Regions in 1994-2006

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 Historic and recent observational data of SO₂ and NO_x from Lin'an and Longfengshan background stations, located in the Yangtze Delta and the Northeast Plain region, respectively, are analyzed in order to study the differences in concentrations of these climate relevant acidic gases between the two regions and impacts of anthropogenic emissions on the gases since about one decade ago. The past and more recent levels of the gases are compared between the two sites, long-term trends of the gases at both sites are estimated, and the NO_x/SO₂ ratios for the two stations are obtained using the correlation method. The results show that in the middle 1990s the levels of SO₂ and NO_x were already considerably high at the background site of the Yangtze Delta region and since that time the anthropogenic emissions have only caused a significant increase in NO_x concentration, making NO_x another major pollutant in addition to SO₂. Data from Longfengshan station suggest that the levels of acidic gases in the Northeast Plain region were very low in the past, and are still not high at present. However, the levels of these acidic gases in this less polluted region have been increasing at very high rates, therefore, the future levels of these gases in the region are not optimistic.

Abstract

Historic and recent observational data of SO₂ and NO_x from Lin'an and Longfengshan background stations, located in the Yangtze Delta and the Northeast Plain region, respectively, are analyzed in order to study the differences in concentrations of these climate relevant acidic gases between the two regions and impacts of anthropogenic emissions on the gases since about one decade ago. The past and more recent levels of the gases are compared between the two sites, long-term trends of the gases at both sites are estimated, and the NO_x/SO₂ ratios for the two stations are obtained using the correlation method. The results show that in the middle 1990s the levels of SO₂ and NO_x were already considerably high at the background site of the Yangtze Delta region and since that time the anthropogenic emissions have only caused a significant increase in NO_x concentration, making NO_x another major pollutant in addition to SO₂. Data from Longfengshan station suggest that the levels of acidic gases in the Northeast Plain region were very low in the past, and are still not high at present. However, the levels of these acidic gases in this less polluted region have been increasing at very high rates, therefore, the future levels of these gases in the region are not optimistic.

关键词 [climate-relevant acidic gases](#) [sulfur dioxide](#) [nitrogen oxides](#) [anthropogenic emission](#) [Yangtze Delta](#) [Northeast Plain](#)

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