

Effectiveness of air quality policy for NO_x emissions in China in the last 10 years

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From OMI satellite observations we have derived NO_x emissions on a provincial level in China for the period 2007-2017. For validation the results are compared to several bottom-up emission inventories and satellite derived emissions in the same period. The national emissions are all of similar magnitude and only at higher resolution the differences are prominent. In general, we see emissions increasing till 2012 after which they slow down and even start decreasing again. To put the changes in NO_x emissions into perspective they are compared with public data on energy consumption and the environmental policies of China. We distinguish the effect of air quality regulations from economic growth by comparing them relatively to fossil fuel consumption. Pollutant levels, per unit of fossil fuel, are used to assess the effectiveness of air quality regulations. The last four years show a reduction in NO_x emissions per fossil fuel unit, since the authorities have implemented several new environmental regulations. Despite an increasing fossil fuel consumption and a growing transport sector, the effects of air quality policy in China are clearly visible. Without the air quality regulations the NO₂ concentrations would be at least 25% higher than they are today in China.