The Health Effects of Air Pollution, Why do We Care?

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Annually 4.2 million deaths globally are attributed to the exposure to ambient air pollution. Good air quality is thus essential for human health and the environment, and critical to achieve the UN 2030 Sustainability Development Goal (SDG) 3: Good Health and Well-being, while the improvement of global air quality can also help to achieve other SDGs, such as 7: Affordable and Clean Energy, 11: Sustainable Cities and Communities, and 13: Climate Action.

Air pollution concentrations are determined by complicated factors and processes, such as large variation of emission sources and the chemical and physical processes in the atmosphere, which make to formulating air pollution control policies complicate and challenging. The fundamental understanding of the formation of air pollution, as well as tools to understand air quality, including online monitoring network and numerical model simulation, are essential in improving global air quality.

International atmospheric chemistry organizations, such as the international Committee of Atmospheric Chemistry and Global Pollution (iCACGP), the International Global Atmospheric Chemistry (IGAC), the Surface Ocean and Lower Atmosphere Study (SOLAS), and the World Meteorological Organization Global Atmospheric Watch (GAW) programme are at the forefront in understanding the factors and processes of air pollutants from the city to global scales.

The World Health Organization has called to reduce two thirds of the mortality due to air pollution by the year 2030. How to reach this target is a grand challenge to global society, and requires joint efforts by scientists, policymakers, industry, and the public.