



Regional carbon monitoring for the Beijing-Tianjin-Hebei (JJJ) City Cluster

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China has committed to peak emission at 2030 and other carbon emissions reduction targets in the Paris climate agreement. After experimenting with carbon trading in seven cities, China is starting a carbon trading system across the nation. Major efforts have been ongoing and are expected to intensify in emissions reduction both for climate change mitigation and improving air quality. The Beijing-Tianjin-Hebei City Cluster has arguably the highest carbon emission intensity in the world. It is urgently needed to monitor and analyze the dynamics of emissions at sufficiently high resolution and accuracy in support of carbon trading and other low-carbon development efforts at national, regional, city, community and individual scales. Our objectives are: 1) To establish a carbon monitoring system for the JJJ region with continuous observations of CO₂ from space, air, and ground; 2) To create an inventory-based high resolution estimates of carbon emissions; 3) To produce best estimates of carbon sources and sinks using model-data assimilation approach; 4) To apply the data and knowledge to low-carbon development goals of government, industry, and communities.