



## **CERCA Newsletter: October 2020**

(Research on Air Pollution and Climate Change)

CMN/Oct/5.0

31/10/2020

### **Greetings from CERCA!**

CERCA celebrated the first ever International day of clean air for blue skies on September 7, 2020 by holding a webinar on the occasion. I am extremely thankful to all the experts and delegates who participated in the webinar and made the entire event extremely engaging. Celebrating September 7, every year as The International Day of Clean Air for blue skies has provided us a unique opportunity to appreciate the importance of clean air for our health and well-being which are fundamental issues concerning everyone.

The global challenge of tackling air pollution is a two-fold problem. Firstly, and most importantly, air pollution has a measurable health impact and is also a problem of inequity, as it especially affects those who are already disadvantaged or vulnerable. Secondly, a few short-lived climate pollutants especially black carbon (which is a component of PM) and tropospheric are linked with both health effects and near-term planet warming. They persist in the atmosphere for as little as a few days or even up to a few decades, so measures to reduce them has co-benefits not just in terms of health but also for mitigating climate change risks. Poor air quality is an important risk factor for both acute and chronic respiratory and cardiovascular diseases and is most likely a contributing factor to the health burden caused by COVID-19.

However, during these times of global COVID-19 pandemic, we have also witnessed a significant, albeit short-term reduction of air pollution, especially nitrogen oxides, a pollutant very much linked to traffic and vehicular movement, which emerged as one of the most affected activities during the several rounds of lockdowns imposed in cities across the world. COVID-19 is undoubtedly an unfolding tragedy but which has also provided us with an unprecedented opportunity at the same time to witness and realize as to how policies related to transport, and the way communities work, study and consume and go about their daily lives, could be leveraged and capitalized upon as we collectively transition towards a new normal that could deliver environmental and health benefits going forward. Stay safe and healthy!

**Hemant Kaushal, Project Coordinator CERCA**

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## CERCA Events



### **Celebrated International Day of Clean Air for Blue Skies**

CERCA, Indian Institute of Technology (IIT) Delhi organised a Webinar on Clean Air Goals for India on 7th September 2020 from 10:00 AM to 12:45 PM on the occasion of International Day of Clean Air for Blue Skies.

### **NASA Citizen Science Project**



This project aims to explore the use of low-cost sensors in measuring air pollution through the engagement of citizens. Adequate ground-based measurements of air quality does not exist in most of the country. Satellite data are used to fill this gap, but satellites cannot provide data at nighttime. To provide the required temporal coverage at a minimum cost, low-cost sensors became very popular in the last few years.

### **IIT Delhi signed MoA with Bihar State Pollution Control Board**



The Bihar State Pollution Control Board has signed a 'Memorandum of Agreement' (MoA) with IIT Delhi on 8th August 2020 for setting up of geographical information system (GIS) based platform for air quality management in the state. Prof. Sagnik Dey, from Centre for Atmospheric Sciences and Coordinator CERCA IITD, will be leading this project with his counterpart Mr. S.N Jayaswal of Bihar State Pollution Control Board, Patna.

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## CERCA in the News



### **First International Day of Clean Air for Blue Skies**

The Indian Institute of Delhi (IITD) Centre of Excellence for

Research on Clean Air (CERCA) also organized a webinar on the topic of Clean Air Goals for India: What did we achieve and where should we go?



### **In Bengal, real-time satellite data to be used for round-the-clock air quality management**

Till date satellite data has been used by scientists for research, but this is for the first time that real-time satellite data would be used for air quality management in cities on a day-to-day basis, said coordinator of the Centre of Excellence for Research on Clean Air (CERCA).



### **Scientists use lockdown to get data on unpolluted Delhi air**

The shutdown is not limited to a particular sector like industry or vehicles. Neither is it a city-level shutdown. It is a pan-India shutdown, so chances of pollution coming from outside has also been minimized. We are gathering data as this an opportunity that Delhi will not get in years to come, said Coordinator of CERCA at IIT Delhi.

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## **Opinion Papers**



### **Air quality improvement: Managing Sources and Sinks**

With the withdrawal of the summer monsoon season, everyone gets concerned about the air quality, particularly in Delhi-NCR. So what happens around the beginning of October that starts deteriorating air quality?

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## **Research Outcomes**

### **The impacts of meteorology on source contributions of air pollution in winter in Beijing, 2015-2017 changes**



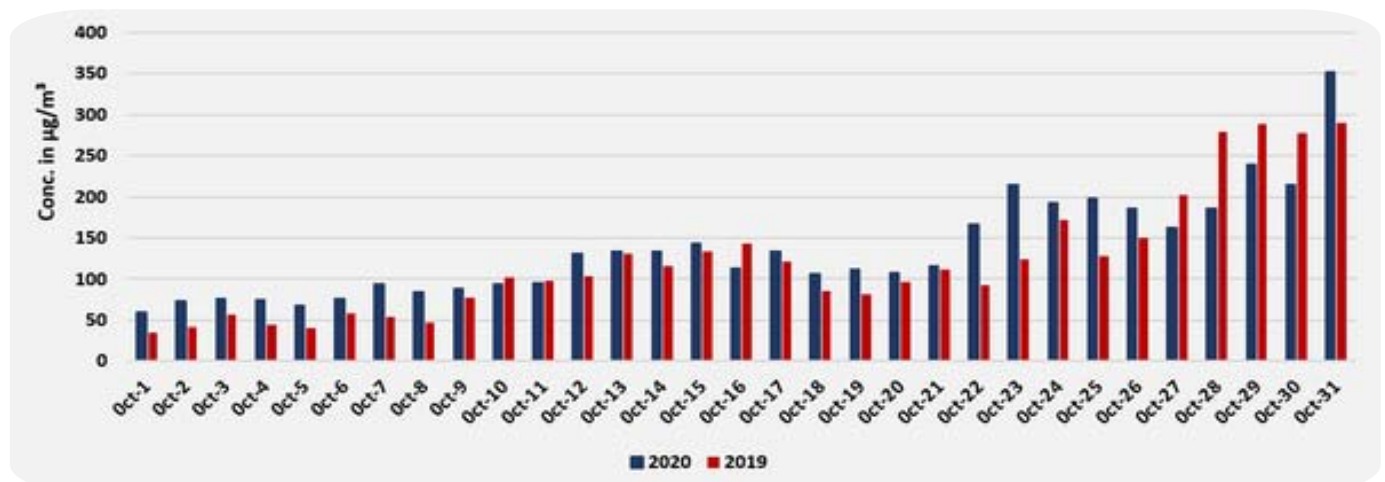
In this study, a combination of monitoring data and the CAMx-PAST (comprehensive air quality model with particulate matter source apportionment technology) model was used to evaluate the meteorological effect of changes in the source apportionment results of PM<sub>2.5</sub>, SO<sub>4</sub>, NO<sub>3</sub>, NH<sub>4</sub><sup>+</sup> and their precursors (SO<sub>2</sub>, NO<sub>2</sub>, and NH<sub>3</sub>) in Beijing in January 2015, January 2016 and January 2017.



### Co-benefit potential of urban CO<sub>2</sub> and air quality monitoring: A study on the first mobile campaign and building monitoring experiments in Seoul during the winter

For the first time, mobile campaign and building monitoring experiments were conducted in downtown Seoul, Korea during the 2018/2019 winter period to assess the possibility of the co-benefit of CO<sub>2</sub> emission reduction and air quality improvement. Given that CO<sub>2</sub> and air pollutants in cities both originate from fossil fuel combustion, monitoring urban CO<sub>2</sub> concentrations using a mobile vehicle and from the top of tall buildings can be a potentially effective approach for diagnosing the air quality.

## Delhi Air Quality Trend for 24 hr. Daily Average



About 10% increase in PM<sub>2.5</sub> levels in October 2020 in comparison to October 2019 have been observed.

## News Highlights



Source: The Tribune & Guardian

### **Farmers oppose Centre ordinance on air pollution**

Farmers and Kisan union leaders opposed the Centre new ordinance to control air pollution, under which a violator can be sent to jail for five years and penalised Rs 1 crore for burning crop residue.



Source: The Hindu

### **Centre sets up permanent Commission to tackle air pollution in Delhi territory**

Dissolving the 22-year-old Environmental Pollution (Prevention and Control) Authority (EPCA) that has so far addressed air pollution in Delhi, the Centre has constituted a permanent body the Commission for Air Quality Management in National Capital Region and Adjoining Areas.



### **Coronavirus | Air pollution linked with 15% COVID-19 deaths worldwide, finds study**

About 15 per cent of deaths worldwide from COVID-19 may be linked to long-term exposure to air pollution, according to a study published on Tuesday. Researchers, including those from Max Planck Institute for Chemistry, Germany, found that in Europe the proportion of COVID-19 deaths linked to air pollution was about 19 per cent, in North America it was 17 per cent, and in East Asia about 27 per cent.

Source: The Hindu

### **Donald Trump Blames China, Russia, India For Global Air Pollution**



The U.S. President has repeatedly blamed countries like India and China for not doing enough on climate change, labelling them as regions with air that is impossible to breathe.

Source: *The Hindu*

## About US

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CERCA was inaugurated at IIT Delhi on 16th February 2018 by the Honorable Lt Governor of Delhi, Shri Anil Baijal and has been set up with the help of Shri Arun Duggal. CERCA will function as think-tank and Action Centre hosted at and drawing from the high quality research expertise available at IIT Delhi and working along with multiple stakeholders including Government, academia and Industry for finding sustainable clean air solutions for Delhi, India and beyond, as appropriate.

## CONTACT US

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