## Unusual Fog along Indo-Gangetic Plains in January 2010 and How Met at IGI Delhi, Successfully Provided a Better Fog Service System which Reduced the Diversion -Whether a Similar System Feasible for Indian Railway Routes?

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Prevalence of large-scale intense fog conditions for very long durations along vast areas of Indo-Gangetic Plains from day to day during last January 2010 have become so unusually high that it does not only rise various important basic scientific questions related to formation mechanics of such newly large-scale weather events, further intensification, persistence and dissipation mechanisms over such large part of the Globe but also, its socioeconomic impact on the region no doubt has been making it well comparable to any other severe weather event those affects India. Study of fog at Delhi and other airports in the region with data since as old as 1960s along with spatial study using surface data and satellite imageries since 1990s shows occurrences of such high duration and high frequency dense fog simultaneously over such a vast region have been totally a new weather phenomenon started somewhere in mid of 1990s when satellite also showing it was started predominantly observed earlier only in some selective months during Dec 1997-1998, Dec 2004 and Jan 1999-2003 (Jenamani, 2007, 2010a and 2010b, Dash et al., 2008) and now again predominant in Jan 2009-2010. With the blanket of dense fog remaining extended during respective months over the huge area in the region from Pakistan to Bangladesh across north India from west to east running almost parallel to south of Himalayan Plateau which has roughly length 2500km and width of 500m, it has now become part of an annual winter ritual for the people living in this vast region to severely struggle to get a safe and dependable communication system as it routinely leaves air, rail and road travelers stranded, their safety endangered, holidays busted and business meetings scrambled. Besides 217 diversion flights alone at IGI Airport with cancellation and delaying of 1000s flights during last Jan 2010, Indian railway has three train mishaps in Utter Pradesh leaving 10 dead during when the first spell of the dense fog affected region in the first week of Jan 2010 after which the authority was forced to issue order to control speeds of all fast moving trains to a bare minimum when it moves in fog affected region. Later also cancelled and delayed 1000s of rain causing severe problems to passengers in severe cold conditions. For a country that's being seen as an emerging regional leader, India is yet to put in place an efficient system in various transport sectors to ensure glitchfree transportation in inclement weather like fog. Besides major losses arises due to severe suffering faced by the people living in the region for commuting near and far including those from distant locations including various fog related accidents over the region which can never be compensated unless one full fledged Fog fool proof system will be operational at these places. But if one summarizes the economical

losses in only one month of Jan 2010 from daily media reports, then there may be cancellation of thousands of flights and trains and diversion or delaying of few hundreds which may well sums upto few hundred corers.

The main objective of present paper is to bring out clearly how severe the large-scale Unusual Fog along western parts of Indo-Gangetic Plains for January 2010 by analyzing ground data from IGI Fog and other airports across the region and by providing some daily satellite imageries of such large-scale for understanding its large spatial exeunt from transport points of views. We have also validated these daily imageries against ground observations to demonstrate that monitoring them through these imageries at real time which are available in www.im.giv.in, may be a suitable solution of fog monitoring to start with a better mitigation plan in railway sectors. It may also help Indian railway to decide which rail routes has been under fog cover and thus may seriously implement a fast fog management in that routes by suitable passing this fog information to respective railway routes/ trains running in that route to follow various safety majors along with special attention passenger conformability and amenities. To work out a long term effective plan, we also briefly documented How Met at IGI Delhi, successfully provided a better Airport Fog Monitoring, Forecasting and dissemination System in the fog season in 2008-2009 and 2009-2010, helping in better traffic management -Whether a similar real time System can be thought up/ feasible for Indian Railway routes?

## **References:**

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