

Integration of ALOHA- MARPLOT in the Real Study of Monitoring Air Quality Measures

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Abstract

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Abstract:

Air is the fresh breeze to sustain the lifestyle of all living being on the earth. Fresh air gives healthy living and the prime factor of survival and existence. Air pollution is a main disquiet for the entire earth, and it must not blow their expansion. Modern state, air pollution is a gas elegant in atmosphere to deface the wellbeing of community. The means of transport emits massive noxious gases of sulphur dioxide to the atmosphere and pollutes the well healthy sustainability. In the location, IIT Chennai during the period of December 2017 and January 2018 utmost concentration in the atmospheric gases, the nitric oxide is gone exceeded to $78.62 \mu\text{g}/\text{m}^3$ concentrations; Nitrogen Dioxide exceeded to $57.13 \mu\text{g}/\text{m}^3$ concentrations; sulphur dioxide is normal to $11.34 \mu\text{g}/\text{m}^3$ concentrations; Ozone level to $92.67 \mu\text{g}/\text{m}^3$ concentrations; Benzene to $27.35 \mu\text{g}/\text{m}^3$ concentrations; Toluene to $5.79 \mu\text{g}/\text{m}^3$ concentrations. For all these level, the threat zone mapping and marplot is plotted to symbolize in graphical shape for advance forecast planning and effective functioning repayment. This paper promotes attentiveness to the community to save nature and shield our civilization, maintain clean commencing of major effects.

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1. M. Arulprakasajothi, U. Chandrasekhar, D. Yuvarajan, and M. B. Teja, "An analysis of the implications of air pollutants in Chennai," *Int. J. Ambient Energy*, vol. 41, no. 2, pp. 209–213, 2020, doi: 10.1080/01430750.2018.1443504.
[CrossRef](#) [Google Scholar](#)

2. A. K. Gorai, F. Tuluri, and P. B. Tchounwou, "A GIS based approach for assessing the association between air pollution and asthma in New York State, USA," *Int. J. Environ. Res. Public Health*, vol. 11, no. 5, pp. 4845–4869, 2014, doi: 10.3390/ijerph110504845.
[CrossRef](#) [Google Scholar](#)

3. Á. Leelőssy, F. Molnár, F. Izsák, Á. Havasi, I. Lagzi, and R. Mészáros, "Dispersion modeling of air pollutants in the atmosphere: a review," *Cent. Eur. J. Geosci.*, vol. 6, no. 3, pp. 257–278, 2014, doi: 10.2478/s13533-012-0188-6.
[CrossRef](#) [Google Scholar](#)

4. J. W. Kim, S. Park, C. W. Lim, K. Lee, and B. Kim, "The role of air pollutants in initiating liver disease," *Toxicol. Res.*, vol. 30, no. 2, pp. 65–70, 2014, doi: 10.5487/TR.2014.30.2.065.
[CrossRef](#) [Google Scholar](#)

5. M. J. Nieuwenhuijsen et al., "Air pollution and human fertility rates," *Environ. Int.*, vol. 70, pp. 9–14, 2014, doi: 10.1016/j.envint.2014.05.005.
[CrossRef](#) [Google Scholar](#)

6. M. Dadbakhsh, N. Khanjani, and A. Bahrapour, "Death from respiratory diseases and air pollutants in Shiraz, Iran (2006-2012)," *J. Environ. Pollut. Hum. Heal.*, vol. 3, no. 1, pp. 4–11, 2015, doi: 10.12691/jephh-3-1-2.
[Google Scholar](#)

7. D. D. Jani, D. Reed, C. E. Feigley, and E. R. Svendsen, "Modeling an irritant gas plume for epidemiologic study," *Int. J. Environ. Health Res.*, vol. 26, no. 1, pp. 58–74, 2016, doi: 10.1080/09603123.2015.1020414.
[CrossRef](#) [Google Scholar](#)

8. X. Jiang et al., "To what extent can China's near-term air pollution control policy protect air quality and human health? A case study of the Pearl River Delta region," *Environ. Res. Lett.*, vol. 10, no. 10, 2015, doi: 10.1088/17489326/10/10/104006.
[CrossRef](#) [Google Scholar](#)

9. Y. Sun, P. Wang, Q. Zhang, H. Ma, J. Hou, and X. Kong, "Indoor Air Pollution and Human Perception in Public Buildings in Tianjin, China," *Procedia Eng.*, vol. 121, pp. 552–557, 2015, doi: 10.1016/j.proeng.2015.08.1032.
[CrossRef](#) [Google Scholar](#)

10. V. Frutos, M. González-Comadrán, I. Solà, B. Jacquemin, R. Carreras, and M. A. C. Vizcaíno, "Impact of air pollution on fertility: A systematic review," *Gynecol. Endocrinol.*, vol. 31, no. 1, pp. 7–13, 2015, doi: 10.3109/09513590.2014.958992.
[CrossRef](#) [Google Scholar](#)

11. R. M. Harrison, M. Masiol, and S. Vardoulakis, "Civil aviation, air pollution and human health," *Environ. Res. Lett.*, vol. 10, no. 4, 2015, doi: 10.1088/1748-9326/10/4/041001.
[CrossRef](#) [Google Scholar](#)

12. S. Subramaniam et al., "Artificial Intelligence Technologies for Forecasting Air Pollution and Human Health: A Narrative Review," *Sustain.*, vol. 14, no. 16, pp. 1–36, 2022, doi: 10.3390/su14169951.
[CrossRef](#) [Google Scholar](#)

13. D. Amarsaikhan, V. Battsengel, B. Nergui, M. Ganzorig, and G. Bolor, "A Study on Air Pollution in Ulaanbaatar City, Mongolia," *J. Geosci. Environ. Prot.*, vol. 02, no. 02, pp. 123–128, 2014, doi: 10.4236/gep.2014.22017.
[CrossRef](#) [Google Scholar](#)

14. M. Abdel-Basset, L. A. Shawky, and K. Eldrandaly, "Grid quorum-based spatial coverage for IoT smart agriculture monitoring using enhanced multi-verse optimizer," *Neural Comput. Appl.*, vol. 32, no. 3, pp. 607–624, 2020, doi: 10.1007/s00521-018-3807-4.
[CrossRef](#) [Google Scholar](#)

15. H. A. Shahriyari et al., "Air pollution and human health risks: mechanisms and clinical manifestations of cardiovascular and respiratory diseases," *Toxin Rev.*, vol. 41, no. 2, pp. 606–617, 2022, doi: 10.1080/15569543.2021.1887261.
[CrossRef](#) [Google Scholar](#)

16. Y. Hong et al., "Air pollution increases human health risks of PM_{2.5}-bound PAHs and nitroPAHs in the Yangtze River Delta, China," *Sci. Total Environ.*, vol. 770, p. 145402, 2021, doi: 10.1016/j.scitotenv.2021.145402.
[CrossRef](#) [Google Scholar](#)

17. C. Wang, Y. Sheng, J. Wang, Y. Wang, P. Wang, and L. Huang, "Air Pollution and Human Health: Investigating the Moderating Effect of the Built Environment," *Remote Sens.*, vol. 14, no. 15, pp. 1–18, 2022, doi: 10.3390/rs14153703.
[CrossRef](#) [Google Scholar](#)

18. M. ENSARI, P. GÜZEL, and E. CAN, "Consequence Modelling and Analysis of Methane Explosions: A preliminary Study on Biogas Stations," *J. Adv. Res. Nat. Appl. Sci.*, pp. 132–144, 2021, doi: 10.28979/jarnas.890649.
[CrossRef](#) [Google Scholar](#)

19. S. Ketin, "International Politics and Ecology: Special Focus to the Protection of Air," *Fresenius Environ. Bull.*, no. December, 2018.
[Google Scholar](#)

20. G. Goudarzi et al., "An evaluation of hospital admission respiratory disease attributed to sulfur dioxide ambient concentration in Ahvaz from 2011 through 2013," *Environ. Sci. Pollut. Res.*, vol. 23, no. 21, pp. 22001–22007, 2016, doi: 10.1007/s11356-016-7447-x.
[CrossRef](#) [Google Scholar](#)

21. S. A. Firdausi, R. Azizah, J. Jalaludin, and Z. A. Zakaria, "Association of short-term exposure to sulphur dioxide and nitrogen dioxide with number of hypertensions in East Java, Indonesia," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 1013, no. 1, 2022, doi: 10.1088/1755-1315/1013/1/012009.
[CrossRef](#) [Google Scholar](#)

22. Y. Guo et al., "The association between lung cancer incidence and ambient air pollution in China: A spatiotemporal analysis," *Environ. Res.*, vol. 144, no. December 2018, pp. 60–65, 2016, doi: 10.1016/j.envres.2015.11.004.

[CrossRef](#) [Google Scholar](#)

23. T. To et al., "Progression from asthma to chronic obstructive pulmonary disease is air pollution a risk factor?," *Am. J. Respir. Crit. Care Med.*, vol. 194, no. 4, pp. 429–438, 2016, doi: 10.1164/rccm.201510-1932OC.

[CrossRef](#) [Google Scholar](#)

24. A. Allahabady, Z. Yousefi, R. A. M. Tahamtan, and Z. P. Sharif, "Measurement of BTEX (benzene, toluene, ethylbenzene and xylene) concentration at gas stations," *Environ. Heal. Eng. Manag.*, vol. 9, no. 1, pp. 23–31, 2022, doi: 10.34172/EHEM.2022.04.

[CrossRef](#) [Google Scholar](#)

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