Data Evaluation and Control of Pollutants in the Air

Follow this and additional works at: https://ecommons.udayton.edu/stander_posters

Part of the Arts and Humanities Commons, Business Commons, Education Commons, Engineering Commons, Life Sciences Commons, Medicine and Health Sciences Commons, Physical Sciences and Mathematics Commons, and the Social and Behavioral Sciences Commons

Recommended Citation
https://ecommons.udayton.edu/stander_posters/747
Data Evaluation and Control of Pollutants in the Air
Hassaan Fahim
Advisor: Dr. Sarwan S. Sandhu, Ph.D., D.I.C.

Introduction:

- The severe air pollution problem arose in the metropolitan area in LA in 1955
- In 1955, U.S Govt. made an act named as “Air Pollution Control Act”

Formation of an EPA:

- EPA was established on December 2, 1970.
- It has 10 different zones for the U.S.

Pollutants:

Main pollutants are:
Carbon Monoxide, NOx, SOx and Particulate matter

Air Quality Index Chart:

<table>
<thead>
<tr>
<th>Air Quality Index (AQI) Values</th>
<th>Levels of Health Concern</th>
<th>Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the AQI is in this range:</td>
<td>...air quality conditions are:</td>
<td>...as symbolized by this color:</td>
</tr>
<tr>
<td>0 to 50</td>
<td>Good</td>
<td>Green</td>
</tr>
<tr>
<td>51 to 100</td>
<td>Moderate</td>
<td>Yellow</td>
</tr>
<tr>
<td>101 to 150</td>
<td>Unhealthy for Sensitive Groups</td>
<td>Orange</td>
</tr>
<tr>
<td>151 to 200</td>
<td>Unhealthy</td>
<td>Red</td>
</tr>
<tr>
<td>201 to 300</td>
<td>Very Unhealthy</td>
<td>Purple</td>
</tr>
<tr>
<td>301 to 500</td>
<td>Hazardous</td>
<td>Maroon</td>
</tr>
</tbody>
</table>

Requirements of Reducing Pollutants as Per EPA Regulations:

- A monitoring program for identifying whether an area is meeting the standards
- Air quality calculations and computer modeling
- Emission inventories describing the sources and categories of emission
- Periodic review and evaluation

Conclusion:

- This work shows the empirical equations generated by plotting curves between concentration versus time (years) in order to predict the approximate (not accurate) values of pollutants for upcoming years
- Inspite of control, check and balance must be done in order to keep the emission values in limits as per EPA regulations because until today, some pollutant emission values are slightly higher than the required magnitude