



Advanced Air Quality Modelling

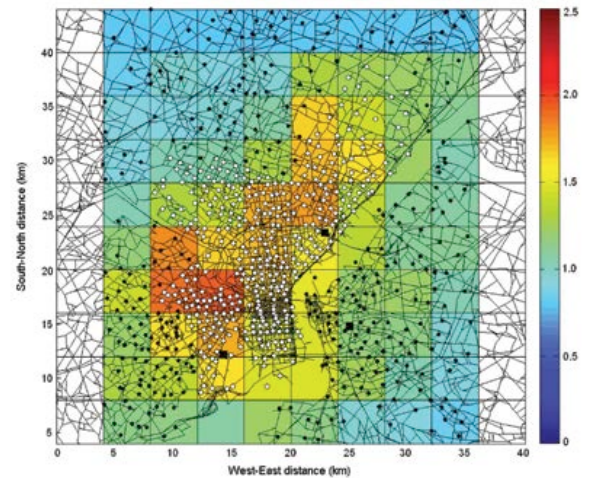
Determination of air quality at the local and regional scales is becoming more important for all levels of government, industry and the public. Governments want to understand the effectiveness of their regulations whereas, industry and the business community use this information to evaluate regulatory compliance and facility impacts. Furthermore, regional air quality modelling is an important tool for cumulative effects assessment.

Novus can help you understand complex air quality issues in a simple way.

Novus' experts have successfully completed hundreds of sophisticated atmospheric modelling projects for all levels of government, industry and business. We use the most advanced and comprehensive air quality models (e.g. CMAQ, WRF-CHEM and CALPUFF) and emission models (e.g. SMOKE) to assess local and regional air quality issues including smog, air toxics and mercury, visibility and haze, and dry/wet deposition. We help our public and private sector clients understand air quality issues over many geographic scales.

At Novus, our focus is on air quality, wind & climate, sound & vibration and sustainable water. We use our knowledge to understand our client's needs and to develop feasible, working solutions, with the goal of harmonizing the built and natural environments. While we are a new firm, our experts have decades of experience in dealing with air quality and related health impact issues at the local, regional and national scales.

Our experts have decades of experience addressing air quality and related matters, such as risks to human health. Novus evaluates air quality effects at the local regional and national scales.



SERVICES:

- Local, Regional and National Emission Inventories
- Multi-Scale 3-D Photochemistry and Transport Modelling
- Development and Assessment of Mitigation Strategies
- Human Health and Economic Impact Analysis
- Integrated Software and Hardware Solutions
- Peer Review, Expert Testimony, Consultation
- Cumulative Effects

CLIENT SECTORS:

- Federal, Provincial Governments
- Municipalities
- Oil and Gas
- Energy
- Industry and Mining

Advanced Air Quality Modelling

Advanced air-quality models are mathematical descriptions of atmospheric transport, diffusion, and chemical reactions of pollutants. Using data that characterize the emissions, topography, and meteorology, they numerically predict air quality within a region. By modelling these complex interactions, it is possible to evaluate the impact of various emission sources, regulatory policies, growth projections, and other factors on air quality.

CONNECTION TO HUMAN HEALTH

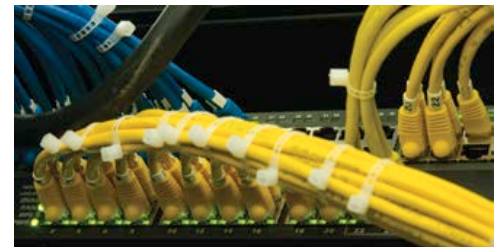
We can also integrate model outputs into existing health impact and economic valuation models to explain the significance and potential implications associated with changes in local and regional air quality and depositions.

COMPUTATIONAL RESOURCES

Advanced air quality modelling requires extensive computational power and data management. Novus has an in-house research-grade high performance computing Linux cluster that is capable of simulating smog formation, acid deposition and air quality status for an entire year, at high resolution, and over large domains in a short time frame, not to mention handling multiple episodes and events simulations.

WHY NOVUS:

- Direct access to senior specialists with expertise in regional and local air quality modelling and meteorology
- Hundreds of large regional airshed modelling projects successfully completed by our Principals
- Familiar with requirements and standards from all levels of government agencies (federal, provincial, municipal)
- Extensive experience working with regulators, industry, and other stakeholders
- Powerful computational resources that provide quick turnaround and peace of mind



Air Quality Models:

CMAQ
CALPUFF
AERMOD
WRF-CHEM
GEOS-CHEM
CAL3QHC/CAL3QHCR

Meteorological Models:

MM5
WRF
GEM-LAM
CALMET

Emission Models:

SMOKE
EDMS
MOVES
MOBILE6.2



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