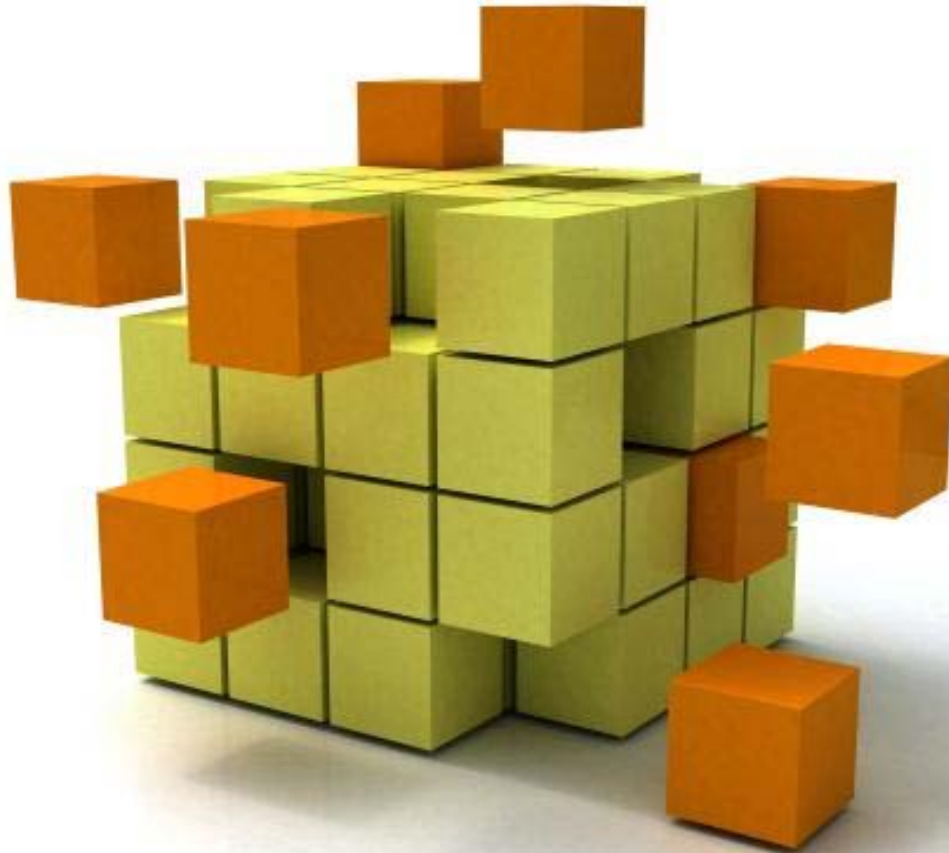


# Fundamentals of Air Quality Modeling



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**Fremont, CA**

**1-Day Course given at  
A&WMA Annual Meeting  
Chicago, IL**

**23 June 2013**

# Overview

With the increasing use of more and more complex air quality models developed and recommended by the US EPA (e.g., AERMOD and CALPUFF), it has become more and more difficult for non-modelers to understand the intricacies and numerical complexities of computer simulation programs. As a result, too often models are used by scientists as “black boxes”, without a good understanding of the relationship between input data and model results.



This course aims at helping non modelers in understanding models, focusing on the most important issues a non-modeler (scientist and/or manager) needs to know, in order to comprehend the basic science of the modeling process and correctly use and interpret model results.

# Agenda:

1. Brief History of air quality modeling in the US
2. Models used today
3. Main algorithms
4. Input data
5. Selection of running options
6. Visualization and interpretation of results
7. Uncertainty and Sensitivity
8. Common mistakes



# Presenter

- Lifetime (since 1971) R&D work in
  - Air pollution modeling
  - Computer analysis / simulation
- Currently:
  - Consulting - EnviroComp Consulting, Inc.
  - R&D/Editorial - The EnviroComp Institute



[www.envirocomp.com](http://www.envirocomp.com)

[www.envirocomp.org](http://www.envirocomp.org)

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# Experience and Qualifications

- 4 decades of Research & Development on air pollution
- Hundreds of peer-reviewed publications, including 40+ books and book chapters
- Extensive air pollution studies performed throughout the world
- Author: first comprehensive book on Air Pollution Modeling (1990)
- Chief Editor and Co-Author: state-of-the-art book series on Air Quality Modeling (4 volumes, 2003-2010)



# Cont.

- International consulting for air pollution: US, UK, France, Italy, Kuwait
- Developer of advanced computer models for air pollution:
  - AVACTA II (was accepted/recommended by the US Environmental Protection Agency)
  - MONTECARLO
- Certified Qualified Environmental Professional (QEP) in recognition of scientific achievements and professional ethics



# Bibliography

- Air Pollution Modeling (1990)
  - <http://envirocomp.com/pops/airpollution.html>
- Air Quality Modeling – 4 Books (2003-2010)
  - <http://envirocomp.org/books/aqm.html>



Books, Articles, Reports,  
User's Guides, etc.  
as referred during the presentation