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Getting to (Modeled) Yes: 5 Conventional and Unconventional Measures to Model Compliance with the New Ambient Standards

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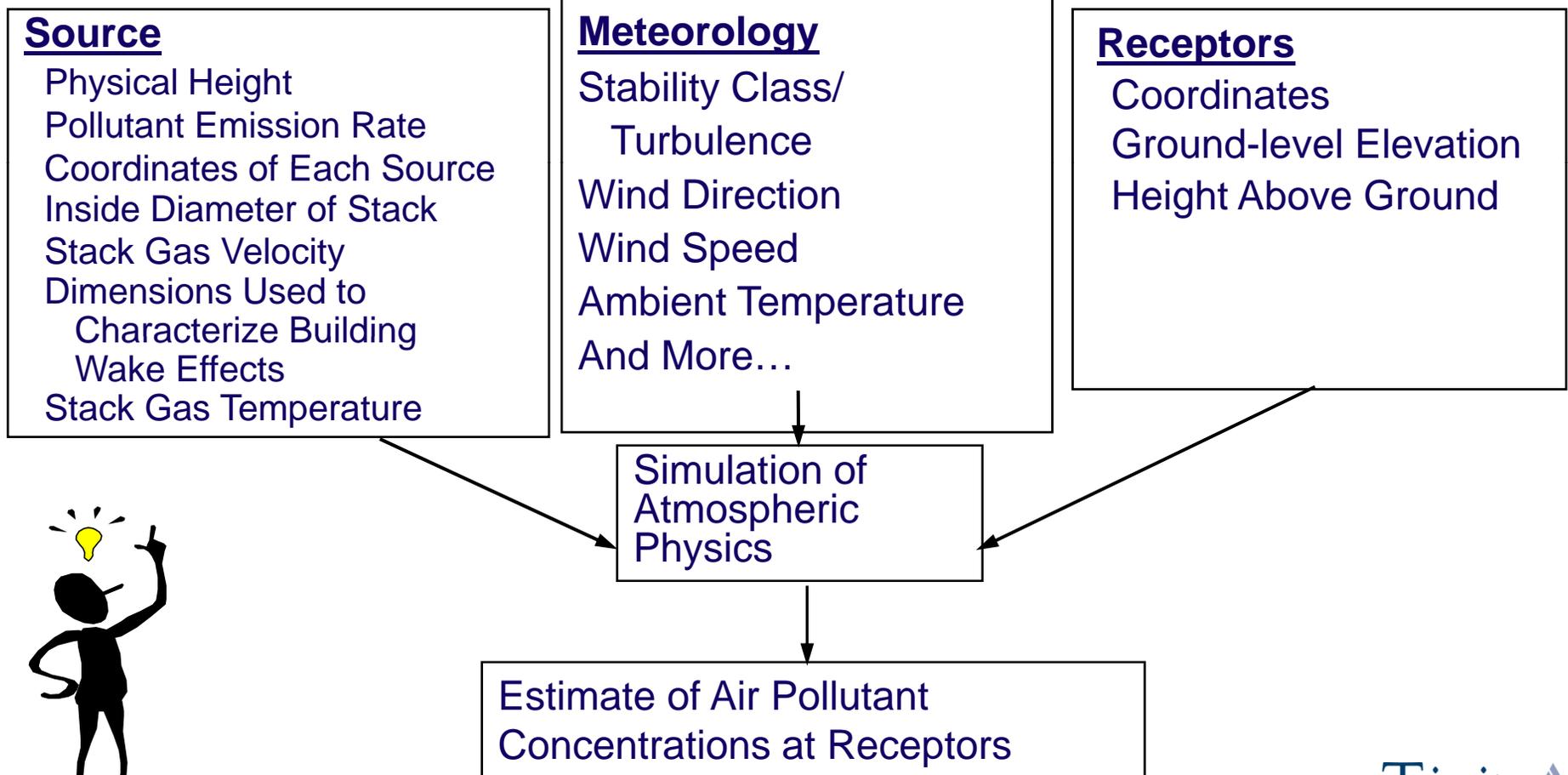
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Presentation Outline

- Brief Background
- Top 5 list: mix of conventional (C) and unconventional (U) measures
- Conclusions
- Acknowledgments

Schematic Diagram of Air Quality Computer Models





The List

5. Recharacterize ambient air as not
4. Reevaluate met and/or monitoring data
3. Building Changes
2. Pursue alternative models/switches
1. Stratify impacts

5. Recharacterize ambient air as not (C)

- A. Beef up (or extend portion of land with) prohibition of access
- B. Fenceline vs. property line (especially for long-term standards)
- C. What if worst case receptor is over water?
- D. U: Buy nearby or adjacent property and fence or otherwise prohibit access; purchase clean air “mineral rights”?





4. Reevaluate meteorological/monitoring data (C/U)

- A. Consider on-site met data
- B. Is a more distant monitor predicting meteorological patterns that more accurately represent those at your site? (and does it help?)
- C. Time-varying background concentration data; “paired sums” (U)
- D. Exclude monitored background data influenced by modeled sources (U)



3. Building changes (C/U)

- A. Rearrange buildings (for greenfield sites) to effect downwash changes
- B. Remove condemned/deactivated buildings (or portions thereof) causing downwash
- C. Increase building height to increase GEP (Parapet)



2. Pursue alternative models/switches (U)

A. Alternative Model Criterion: Identifying Complex Winds

Example: CALPUFF vs. AERMOD

B. Alternative Switch: Rethink rural vs. urban coefficients

Is a tall urban stack releasing above the urban boundary layer at critical meteorological hours?

1. Stratify releases to spread impacts (U)

A. Could mean lowering the stack height of one or two stacks in an array of 3 or more identical stacks



B. Could mean adding wet scrubber selectively (at one emissions point) to both lower an emission rate and a plume rise relative to another source



Conclusions

- Standards are tough to meet – understanding and creativity needed
- Broad range of inputs provide many considerations to effect changes
- For any given source, most alternatives won't work – but a few might
- Apply any and all reasonable means



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Questions?

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