



Update on Technical and Regulatory Elements of Regional Haze SIPs

Gary Kleiman

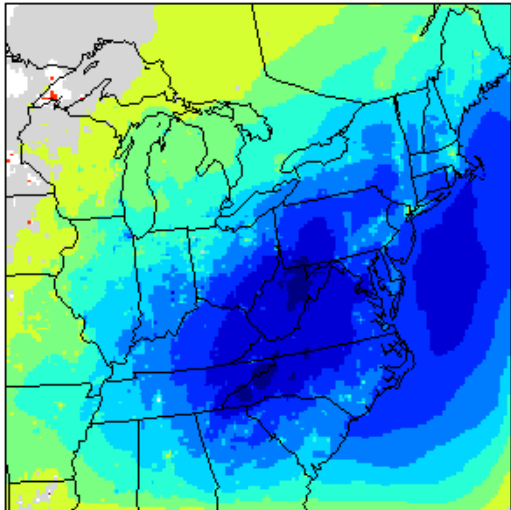
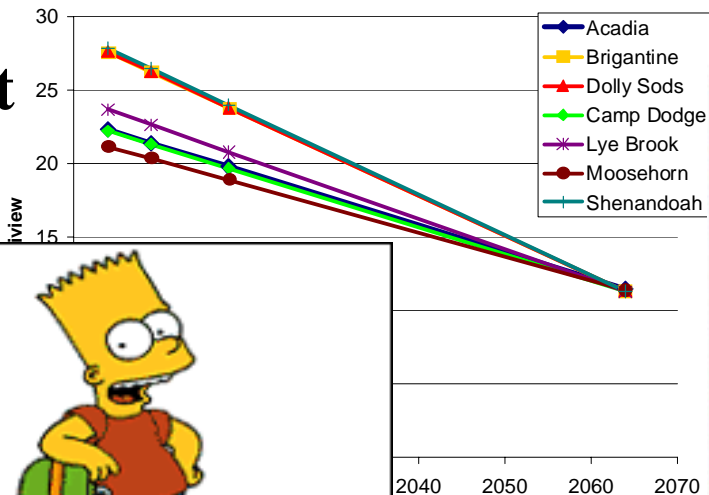
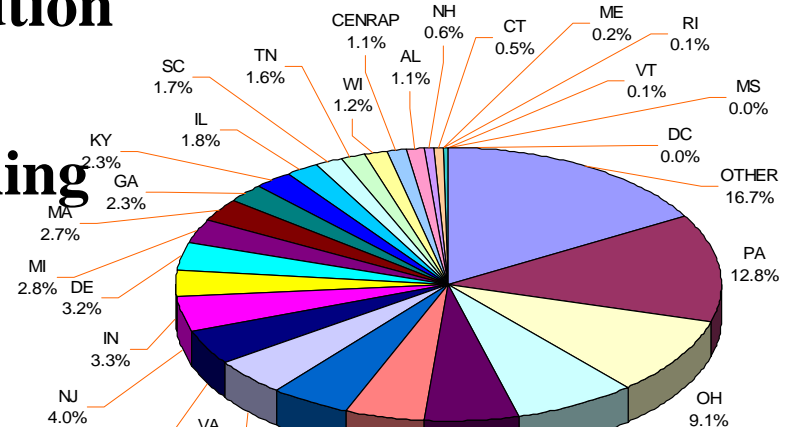
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MANE-VU Board Meeting

May 8, 2006

Technical & Regulatory Needs

- **Contribution Assessment/Pollution Apportionment**
- **Preliminary MANE-VU Modeling**
- **New IMPROVE Equation**
- **BART Resource Book**
- **State-by-State BART Determination support**



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Contributions to Regional Haze in the Northeast and Mid-Atlantic United States

- Available in draft form – taking comments for next month
 - REMSAD with SO₂ tagging
 - CALPUFF with 2 types of Meteorology
 - Trajectory methods (Incremental Probability and Cluster Weighted Probability)

Residence time probability & emissions

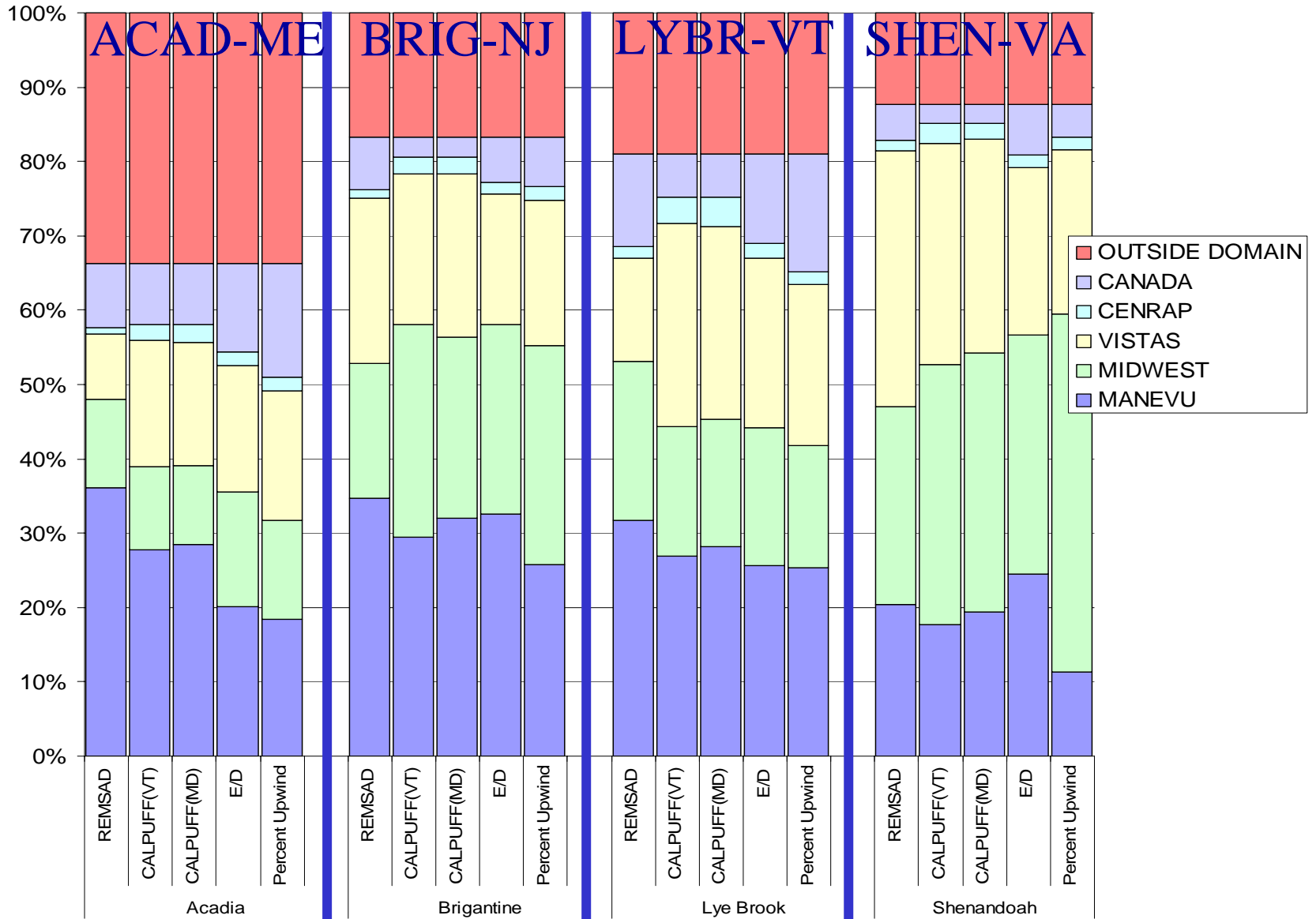
Plus conceptual model, monitoring strategy,
baseline conditions, emission inventory, and more...

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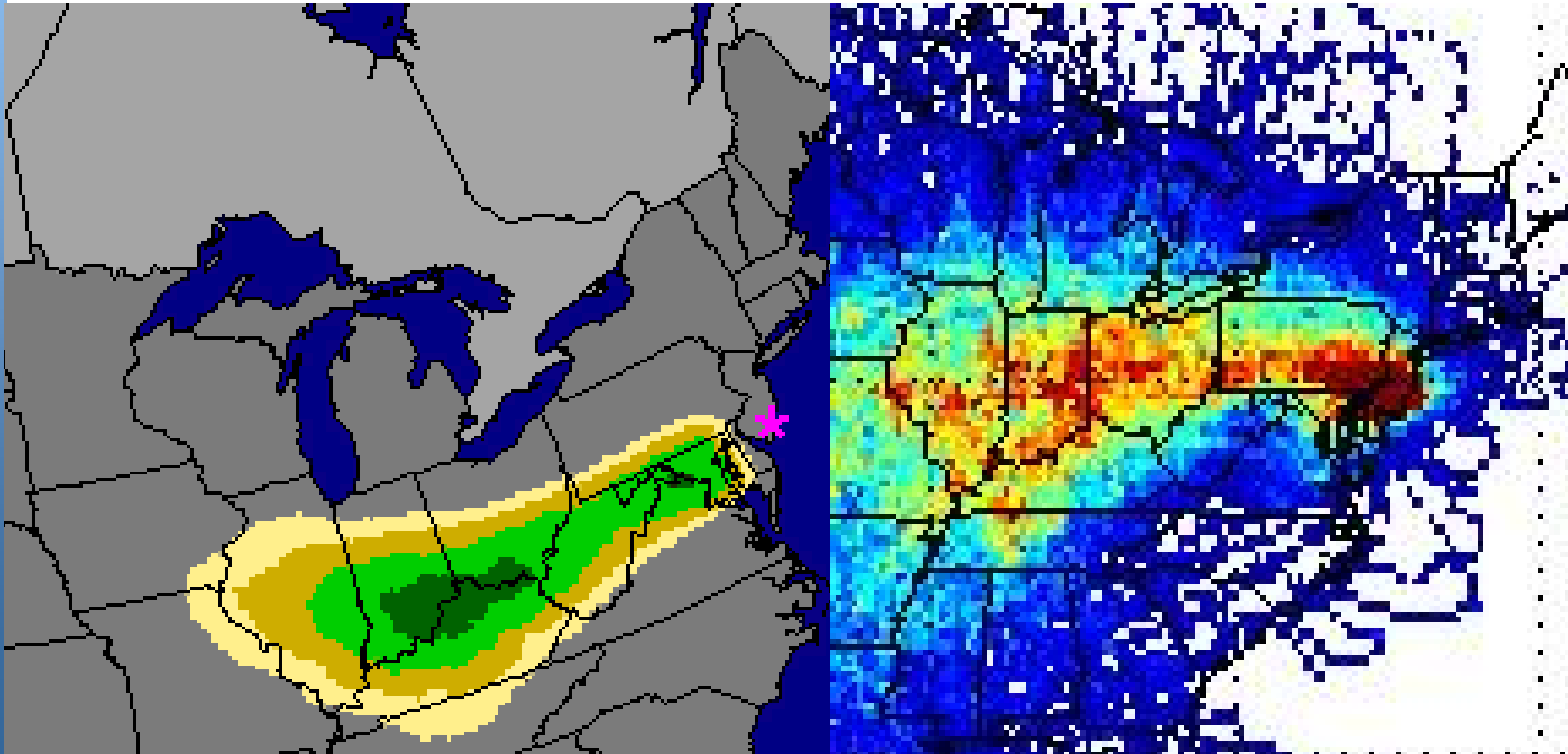


Sulfate Contribution by RPO





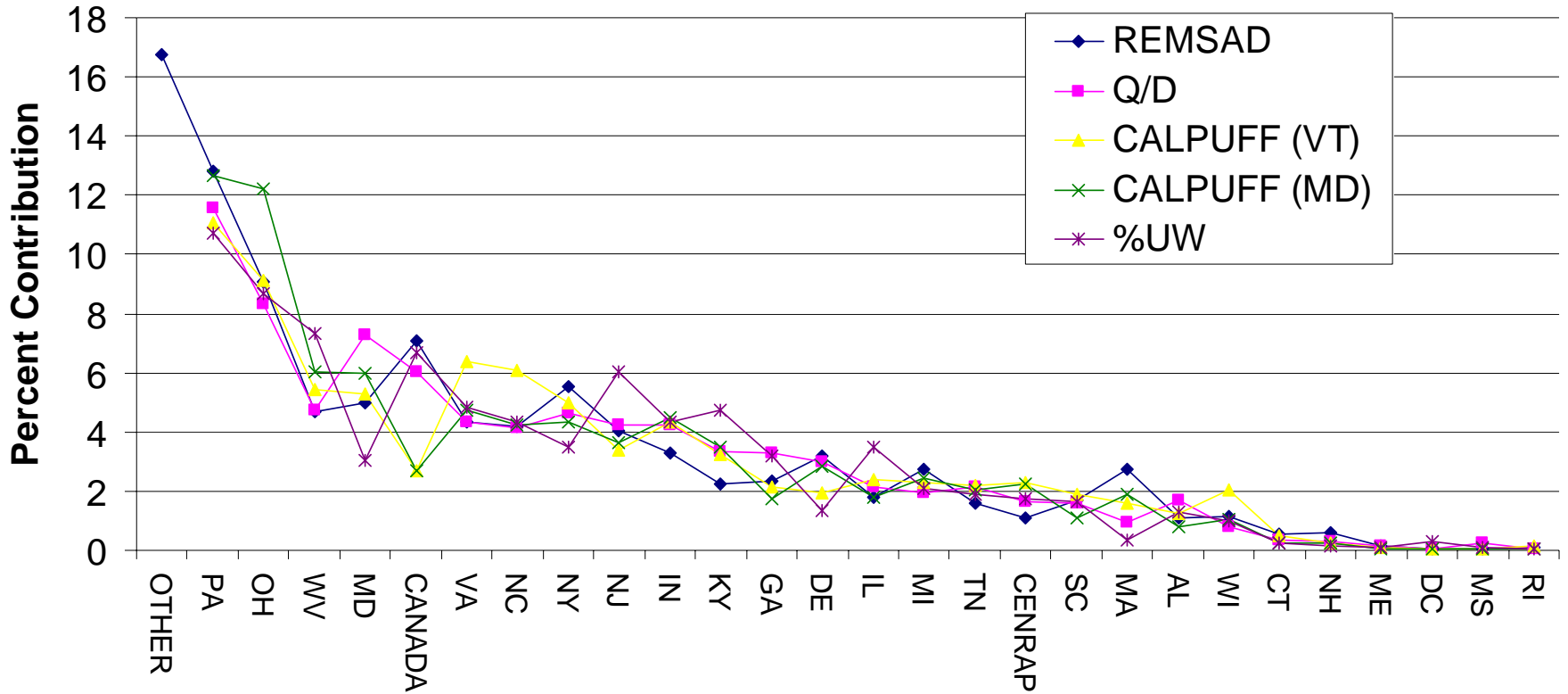
Source Models and Receptor Models Agree!



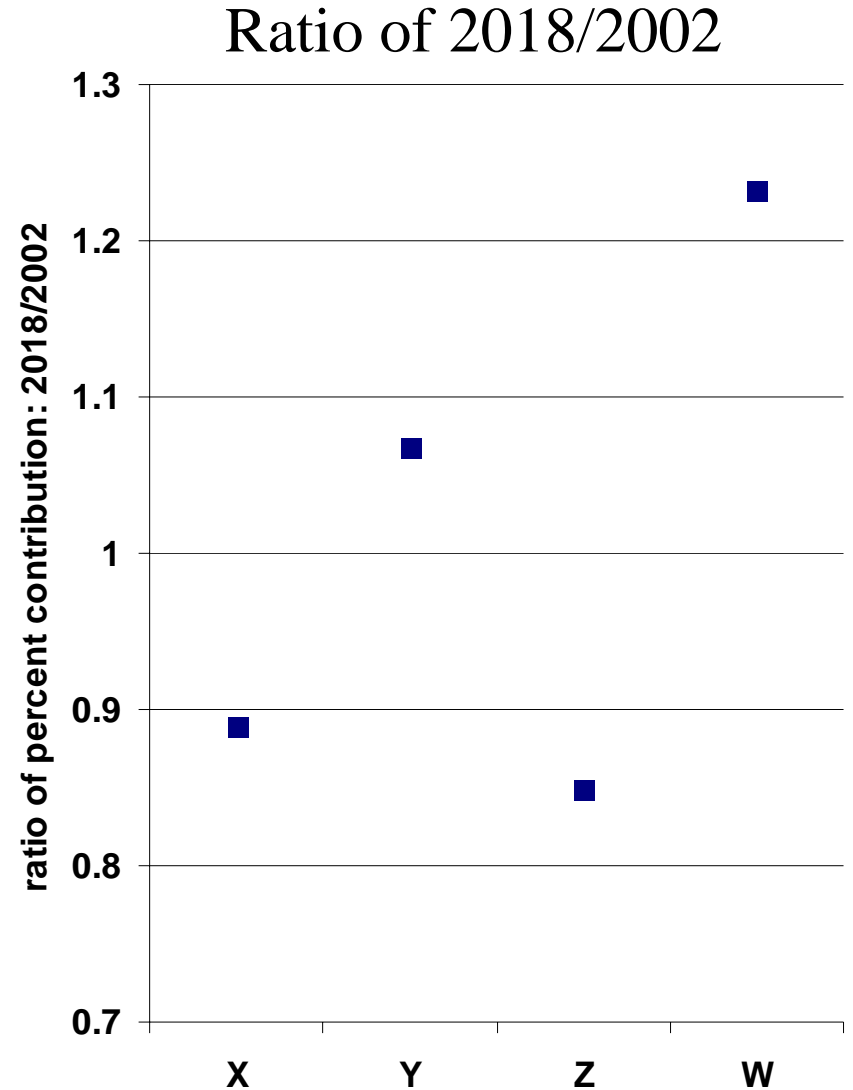
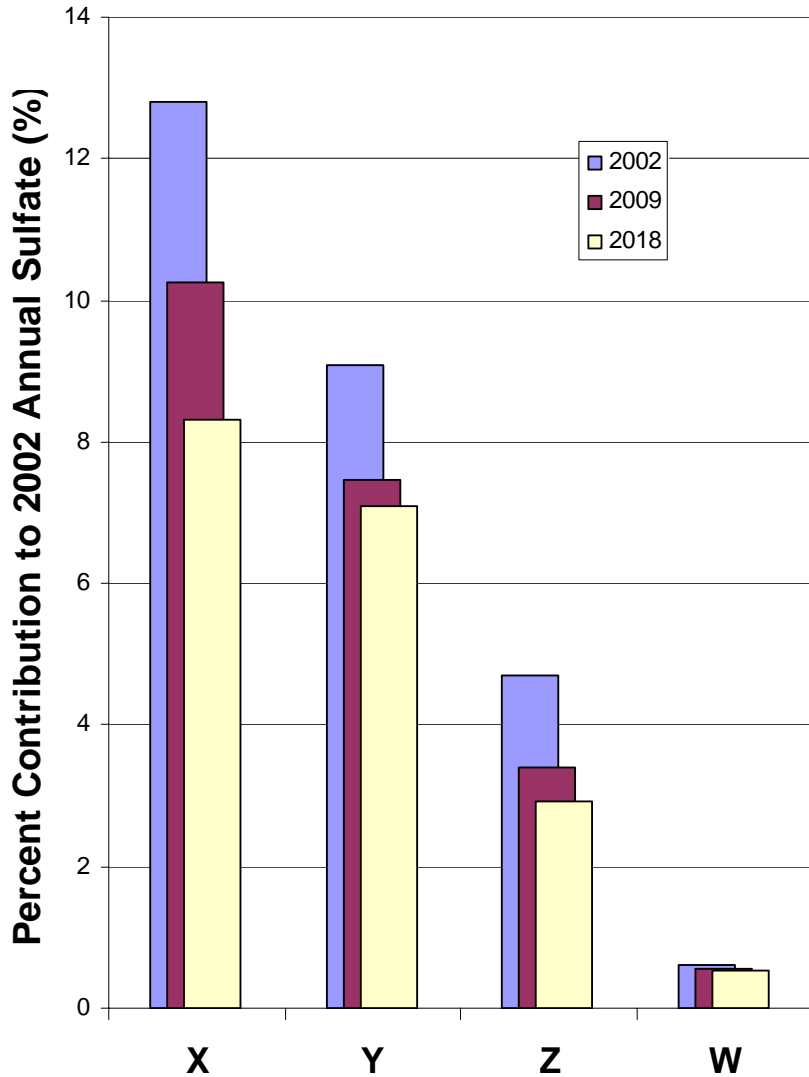


2002 Average SO4 Contributions *(by state)*

Brigantine



Example: 2018 Contributions



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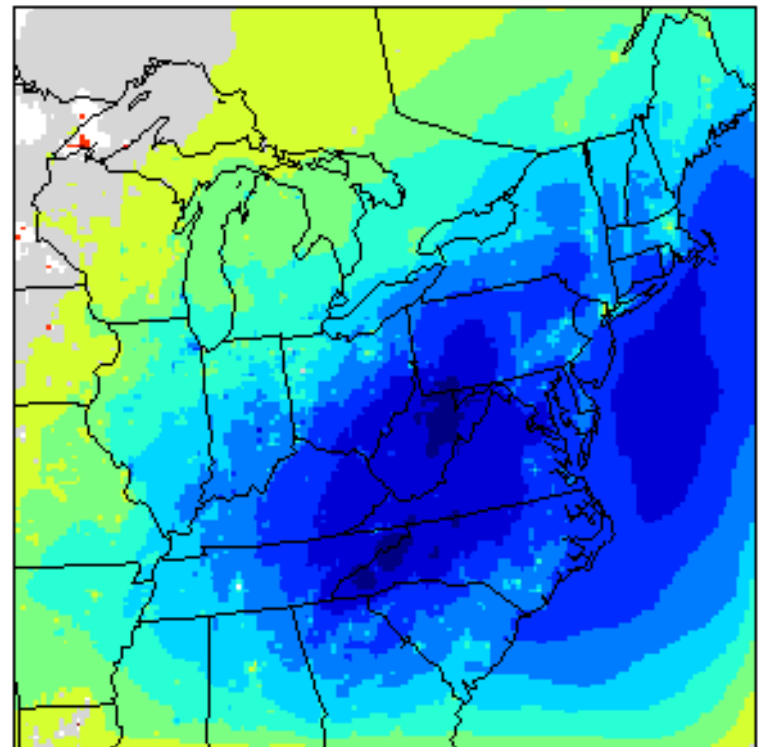
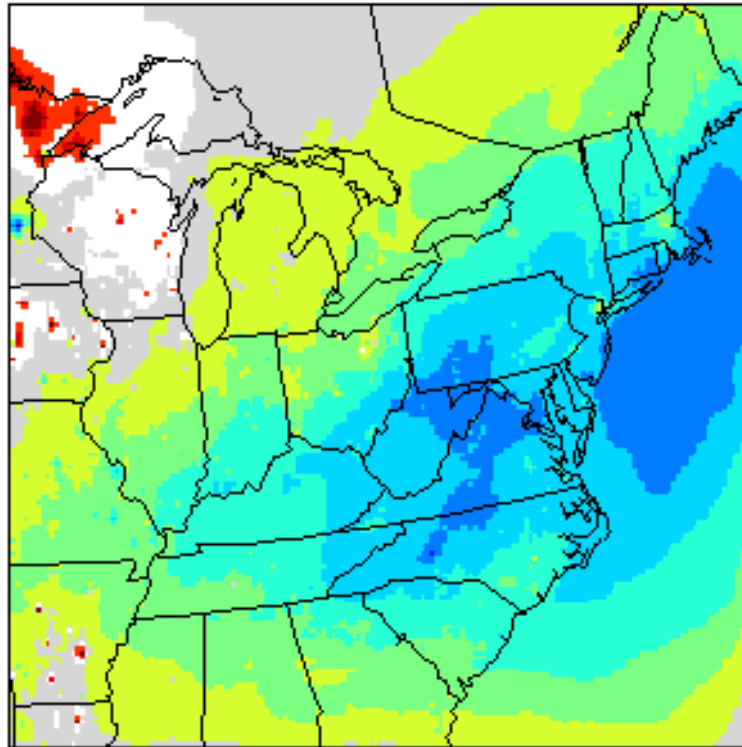
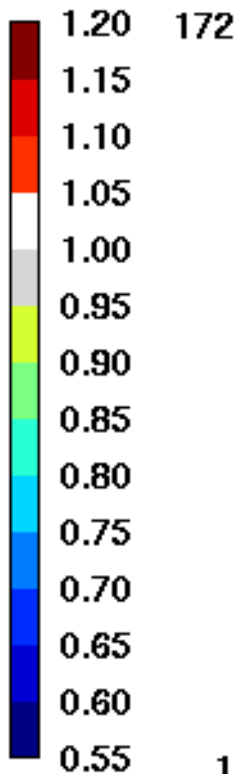
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Sulfate Relative Reductions

2009 Relative Mass Reduction

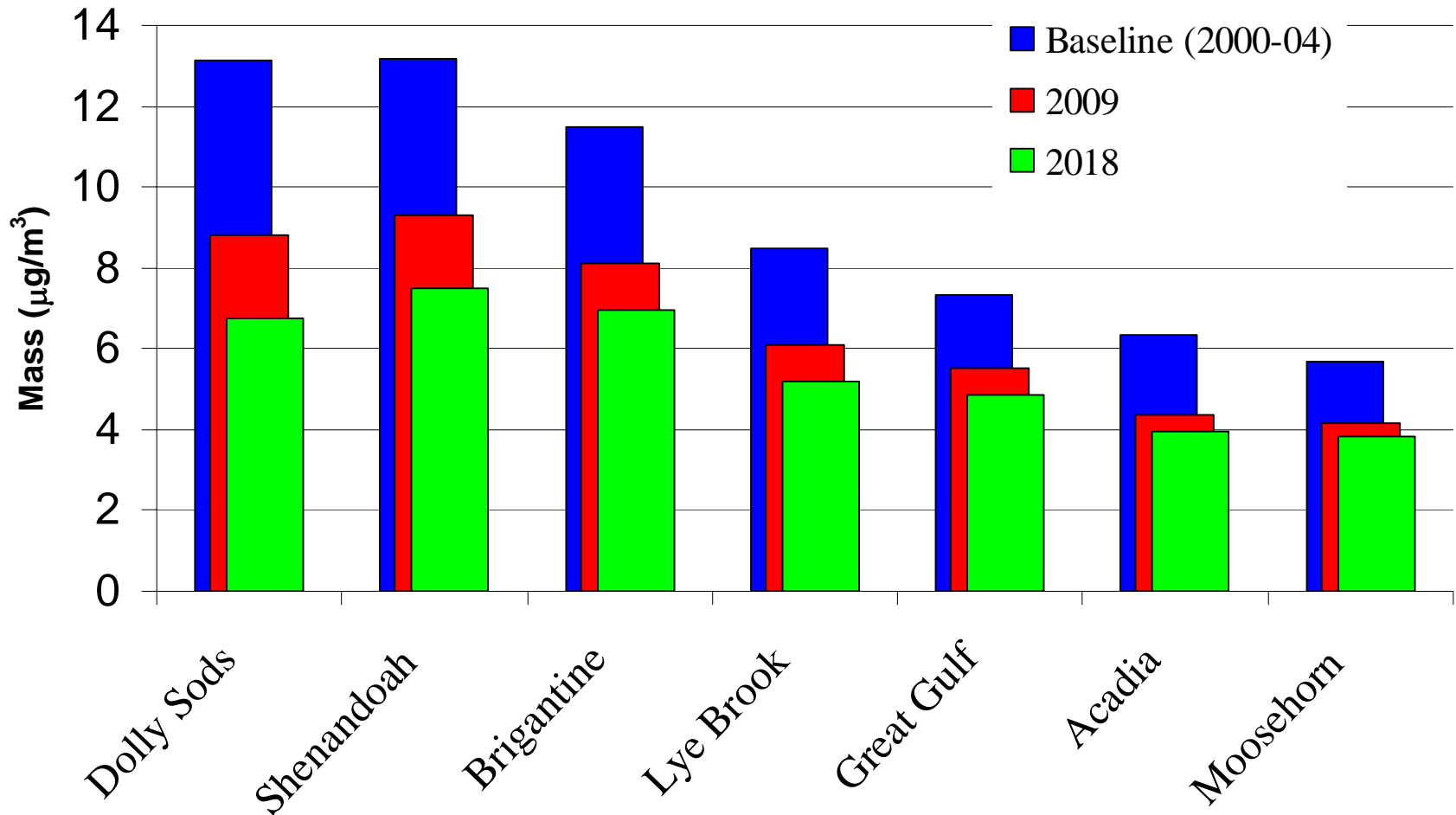
2018 Relative Mass Reduction





Projected Mass Reductions

Annual Average Sulfate Values



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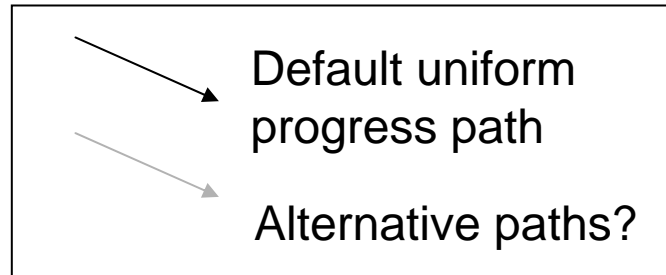


Need Natural Conditions to Estimate Effect

Alternative Baseline Conditions



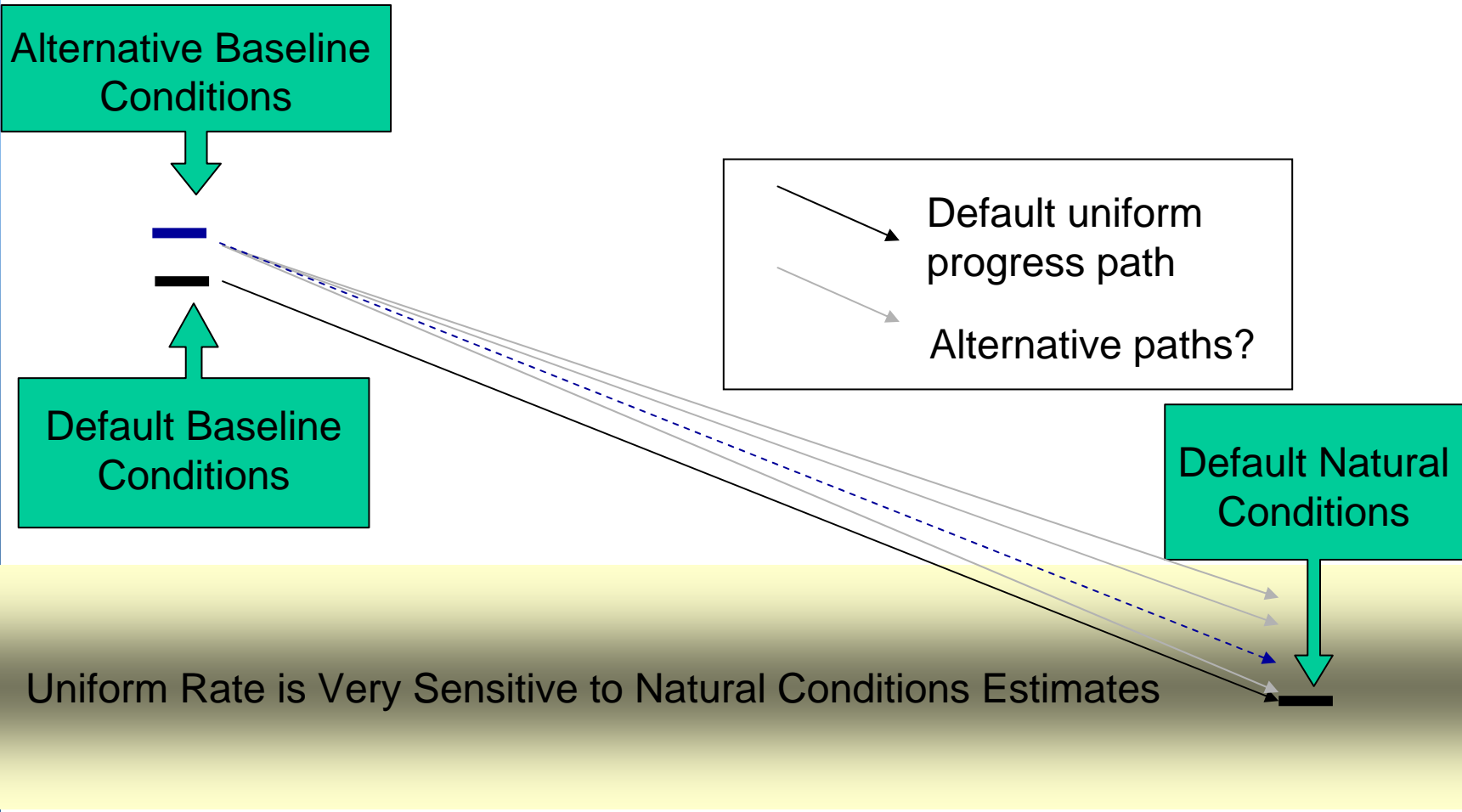
Default Baseline Conditions



Default Natural Conditions



Uniform Rate is Very Sensitive to Natural Conditions Estimates





BART Resource Book

- Review of Regulations
- BART Eligible Source List (to the extent possible)
- MANE-VU BART Process and BART Workgroup Recommendations
 - All eligible sources are subject to BART
 - Presumptive levels of control
- BART Technology Assessment and Other Resources
 - M-V Assessment (EGU/ICI/Cement/P&P)
 - Industry Assessments
- BART Determinations (including visibility determinations!)

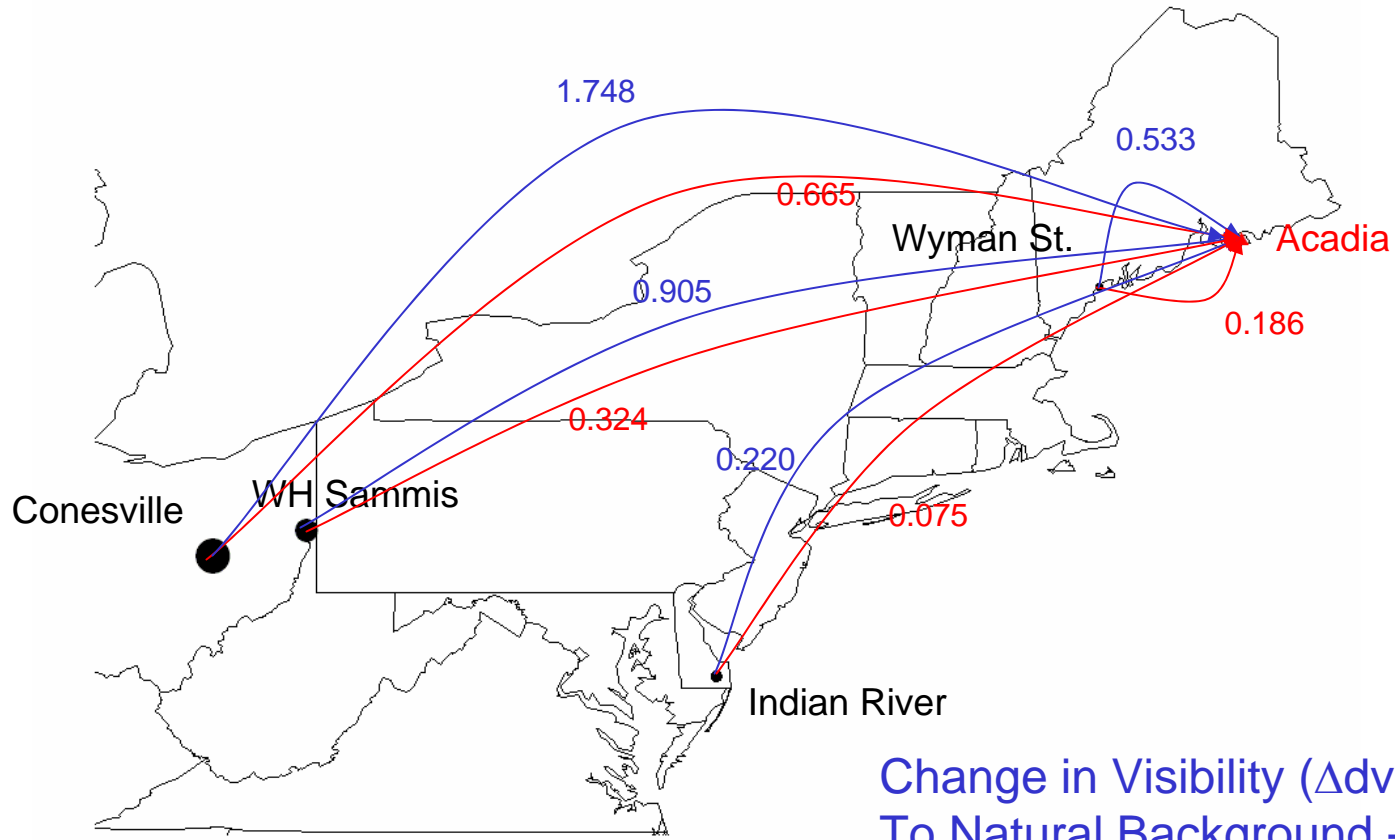


Visibility Determinations

- CALPUFF (MM5 driven meteorology)
- CALPUFF (NWS Observation driven met.)
- 2002 contribution and post-BART, if applicable
- Workgroup still investigating metrics, but 24-hour maximum impact at each Class I areas against natural conditions seems likely
- Sulfate, PM, and Nitrate will be calculated

Acadia 24-Hour Max Day Impact

(relative to 20% worst natural and baseline conditions)

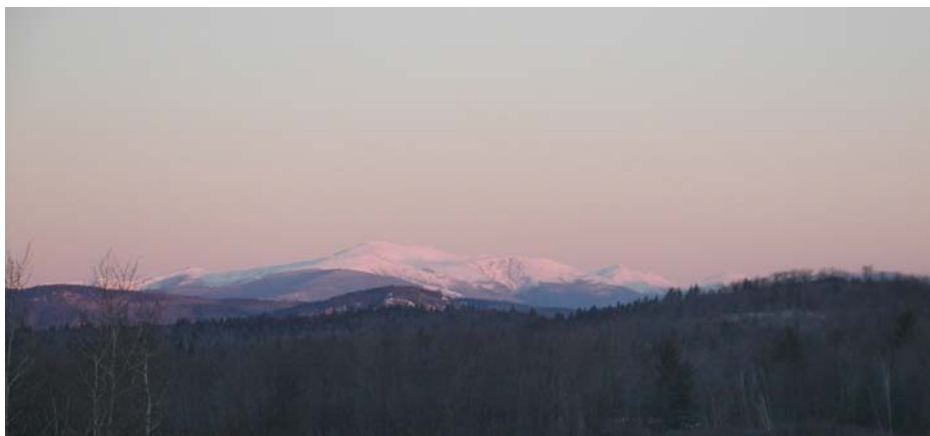


Change in Visibility (Δdv) relative To Natural Background - Blue

Change in Visibility (Δdv) relative To Baseline - Red

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CAMNET – <http://www.hazecam.net>



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The Clean Air Association of the Northeast States

The NESCAUM logo features the word "NESCAUM" in a bold, black, sans-serif font. It is flanked by two large, blue, wavy lines that curve upwards and outwards, resembling stylized waves or a mountain range.

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