



CORMIX Mixing Zone Model Workshop

June 15th – 16th, 2010

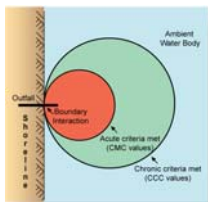
Portland, Oregon USA

Course instructor Dr. Robert L. Doneker, Ph.D., P.E.



Portland State University (PSU) and MixZon Inc are sponsoring a 2-day CORMIX Mixing Zone Workshop to be held on the PSU campus in Portland, Oregon USA. The workshop will be hosted by the Department of Civil and Environmental Engineering.

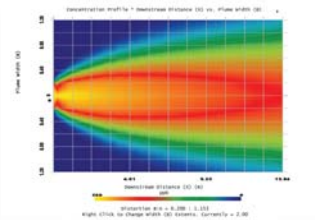
The workshop will explore the application of the USEPA-supported CORMIX model for outfall design and mixing zone regulatory compliance. This course delivers technical training to engineers, scientists, regulators, and consultants on mixing zone modeling for NPDES mixing zone permits. The course includes an introduction to the theory of transport modeling, outfall design, and mixing zone water quality management supported by extensive hands-on computer exercises.



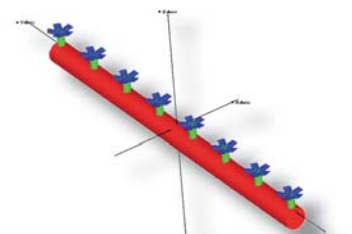
Regulatory Mixing Zones



Outfall with Shoreline Impact



CorVue Visualization



CorSpy Visualization of Rosette Alternating Diffuser

- ✓ **Review** the basic theory of mixing zone modeling from point source discharges.
- ✓ **Explore** new ways to schematize data and extend range of model application.
- ✓ **Discover** time saving tips and techniques for advanced model application.
- ✓ **Learn** to avoid benthic ecological impacts with advanced outfall designs.
- ✓ **Comply** with NPDES requirements for conventional and toxic discharges.
- ✓ **Earn** credits for 1.6 CEU (Continuing Education Units) or 16 Professional Development Hours (PDH)¹

Workshop Location/Time

Portland State University

Room: EB 103 (Engineering Building - Grid10H on campus map)

1930 S.W. 4th Ave

Portland, OR 97201 USA.

Time: 8:00 AM - 5:00 PM daily, June 15th (Tuesday) & 16th (Wednesday) 2010

Workshop Tuition

USD \$1199.00 tuition² for 2-day workshop includes instructional notebook and all workshop materials.

Early-bird tuition is **USD \$999.00** if registration is completed by **03/1/2010** (March 01st 2010)

To register, please print, complete and fax the registration form available at <http://www.mixzon.com/training/wr.pdf> to 503-296-2354 (Fax).

¹ Based upon 10 contact hours per CEU

² Tuition is non-refundable however substitutions are encouraged. CORMIX software for use outside the course must be purchased separately.

About the Instructor

Dr. Robert L. Doneker, P.E. is the primary developer of the USEPA-supported CORMIX system and is also a Portland State University (PSU) faculty member.

Dr. Robert Doneker maintains an active research and teaching program as a faculty member in the department of Civil and Environmental Engineering in Portland State University (PSU), Portland, OR.

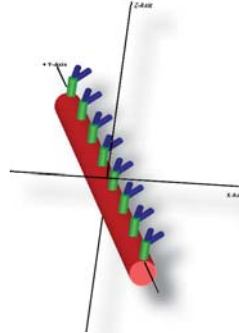
Currently, Dr. Doneker teaches courses in hydraulic modeling, mixing zone analysis, stream restoration,

CORMIX Workshop Schedule

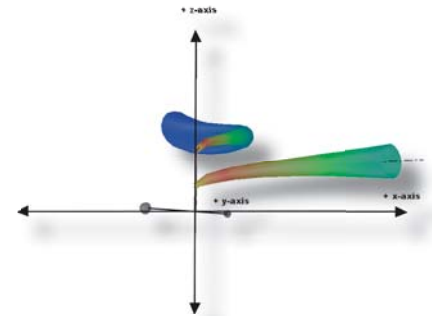
DAY 1 - CORMIX Overview

AM

- Introduction to Mixing Regulations
- Conventional, Toxic Mixing Zones
- Near-field Mixing Processes
- Far-field Mixing Processes
- CORMIX Software



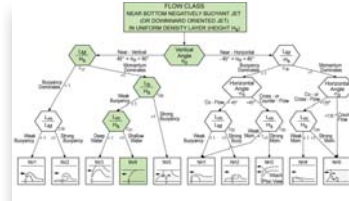
CorSpy Staged Diffuser



CorVue/CorJet Visualization

PM

- Mixing Models, CORMIX
- Boundary Interaction
- Data Requirements/Schematization
- Single Port Discharges
- Case Study - CORMIX1



NV4 Flow Class Decision Tree



A Buoyant Jet Trapped by Density Stratification Forms a Density Current

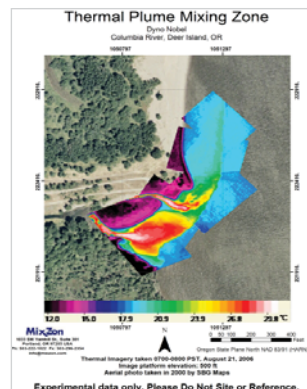
DAY 2 - CORMIX Applications

AM

- Fluxes, Length Scales
- Flow Classification
- Multiport Diffusers
- Case Study - CORMIX2
- Post-Processing
- Graphics, Sensitivity Studies

PM

- Design Advice, Recommendations
- Surface Discharges
- Case Study - CORMIX3
- Advanced Applications
- Remote Sensing & Monitoring



Thermal Plume Mixing Zone



Dilution Contours from a field dilution study

Campus, Hotels/Lodging and Local Transportation

PSU Campus Map: <http://www.pdx.edu/campus-map>

Nearby hotels and lodging: <http://cegs.pdx.edu/stay/upl/>

Local public transport options : <http://www.trimet.org>

Tri-Met Max Train from PDX Airport: <http://www.trimet.org/schedules/maxredline.htm>