

*Thank You to Our Sponsors*

*AVL*

*Air Quality Management District*

*Engine Manufacturers Association*



*California Air Resources Board*

*U.S. Environmental Protection Agency*



*Bourns Automotive Division*

*Dewetron*

*ECM Engine Control and Monitoring*

*EmiSense*

*Horiba*

*Sensors*



# 2012 PEMS Conference and Workshop

**"Sharing the latest advancements in the development and application of  
Portable Emission Measurement Systems"**

Reception: 6:30-9:30 PM Wednesday, March 28, 2012  
Conference: 8:30 AM-5:00 PM Thursday, March 29, 2012  
Workshop: 9:00 AM-4:00 PM Friday, March 30, 2012

## UCR

**All Events take place at:**

1084 Columbia Ave.  
University of California, Riverside  
College of Engineering-Center for Environmental Research and Technology  
Riverside, CA 92507  
[www.cert.ucr.edu](http://www.cert.ucr.edu)





# Conference, March 29th

08:30	INTRODUCTION:	
UCR	J. Wayne Miller	Introduction
SCAQMD	Ronald O. Loveridge	Mayor, City of Riverside, AQMD Board Member, Welcome Remarks
UCR	Kent Johnson	In-use Testing: Highlights with MythBusters

U.S. EPA

09:10	REGULATORY PERSPECTIVE:
Larry Oeler & Justin Greuel	Updates on the U.S. In-use Compliance Testing Program: Regulatory Status and Policy Development Using PEMS
Alessio Provenza	Updates on the PEMS Developments for the European Emissions Legislation: Towards a Better Control of Real-World Emissions

JRC

CARB

09:50	LESSONS AND APPLICATIONS:
Mohan Krishnamurthy	In-use Testing of Late Model Heavy-duty Diesel Trucks Using a Portable Emissions Measurement System

Cummins

John Bowman	Lessons and Applications in PEMS for On-Highway Measurements
-------------	--

WVU

10:30-10:50	BREAK
Daniel Carder	Future Considerations for In-use Compliance Testing

U.S. EPA

John Koupal	Use of PEMS from a Research and Modeling Perspective, Including Future Plans
-------------	--

EmiStar

Michael Block	Development of Test Cycles, Data Analysis, and Replicating Real-World Equipment Operation
---------------	---

CARB

John Karim	Preliminary Investigation of the Correlation Between In-use Diesel Engine PM Emission Rates and Opacity
------------	---

Volvo

Steve Trevitz	HDIUT Compliance Project, “Lessons Learned” with Combined Gaseous & PM PEMS
---------------	---

UCR

12:30-13:30	LUNCH
George Scora	Development of a Mobile Energy and Emissions Telematic System (MEETS)

Caterpillar

Eric Walker	Latest Advances in PEMS and their Features: Off-Road Applications
-------------	---

UCR

Kent Johnson	NEW DEVELOPMENTS AND RESEARCH: Comprehensive Evaluation of AVL's Gaseous PEMS: Laboratory and In-use Correlations: Pre- and Post-2010 Emissions
--------------	--

AVL

Michael Arndt	AVL M.O.V.E. – Comprehensive and Integrated In-Vehicle Measurement Platform
---------------	---

Sensors

Bertrand Lanher	LASAR: High Speed Tools for the In-use Measurement of Nitrogen Containing Species
-----------------	---

Sensors

David Booker	Updates on Sensors Latest ECOSTAR Products and Emerging Tools
--------------	---

15:30-15:50

BREAK

15:50

PANEL DISCUSSION:
Consider the above issues and examine pathways to resolutions including testing improvements, limitations of PEMS for in-use testing, and what applications require 1065 compliant PEMS.



# Workshop, March 30th

09:00-12:00 & 13:00- 16:00 RIDE AND DRIVE EVENT (1 hour duration)

Vehicle#1:	AVL VW Jetta Diesel – M.O.V.E car (5 minutes)
Vehicle#2:	AVL VW Golf GDI – PEI’s demonstrator (5 minutes)

Station#1:	AVL InMotion (15 minutes) Title of the Station: High-performance Virtual Vehicle-driver-road-traffic HIL Environment Station Owner: Felix Pfister Supporters: PJ Pankratz, Phil Shaw Data Analysis: Jetta vehicle
------------	---

Station#2:	AVL M.O.V.E PEMS (15 minutes) Title of the Station: Real-World, In-use PEMS and EPA Reporting Station Owner: Roland Wanker Supporters: Paul Clark, Karl Oberguggenberger Data Analysis: Jetta vehicle
------------	---

Station#3:	AVL M.O.V.E Combustion and Fuel Consumption Measurement (15 minutes) Title of the Station: Real-World Portable Combustion and Fuel Consumption Measurement Station Owner: Dennis Shen Supporters: Siegfried Roeck Data Analysis: Jetta and Golf vehicles
------------	--

11:00-13:00 TRAINING SEMINAR AND LUNCH: “How-to for PEMS Testing”

TUEV	Karsten Mathies	Mobile In-use Measurement in Real Agricultural Applications Following the EU-PEMS Pilot Program for Non-road Mobile Machinery
UCR	Joseph Menke & Kent Johnson	CAN Interfacing for PEMS: Uncovering the Details of CAN Messaging and Interfacing with Application
WVU	Daniel Carder	Tips for High Quality and Reliable PEMS Testing
UCR	Bill Welch	Ocean Going Vessel Testing: A Comparison Between The Semtech DS and the Horiba PG250
UCR	Tanfeng Cao	The Nuts & Bolts of a Complete 1065 Audit



15:00	PANEL DISCUSSION:
	This final round table panel will be to consider the previous day's discussion, today's discussions, and the need for future tools to help address issues raised.