

E-CoSM 2018

The 5th IFAC Conference on
Engine and Powertrain Control,
Simulation and Modeling
China • Changchun
Sep.20-22, 2018

Deadline of Paper Submission—March 26, 2018

Notification of Acceptance—June 18, 2018

Deadline of Final Paper Submission—July 15, 2018

Key Dates

Welcome to E-CoSM 2018 !

Organizers

International Federation of Automatic Control (IFAC)

<https://www.ifac-control.org>

Chinese Association of Automation(CAA)

<http://www.caa.org.cn>

Jilin University

<http://www.jlu.edu.cn>

**State Key Laboratory of
Automotive Simulation and Control, Jilin University**

<http://www.ascl.jlu.edu.cn>

State Key Laboratory of Engines, Tianjin University

<http://skle.tju.edu.cn>

E-CoSM was created in 2006 as a triennial workshop series. After four editions, it is updated and E-CoSM 2018 is the first edition as an IFAC conference series. The conference is sponsored by the IFAC Technical Committee on Automotive Control and organized by Jilin University's State Key Laboratory of Automotive Simulation and Control (ASCL) and Technical Committee on Vehicle Control and Intelligence (VCI).

Research achievements on engine and powertrain control, simulation and modeling in recent years will be displayed and concluded on the conference. In the meantime, the major problems in science, technology and policy that people may face in the future will be explored. E-CoSM 2018 will be held at the South Lake Hotel in Changchun, China. It will be held from September the 20th to 22nd in 2018. Regular papers presented at E-CoSM 2018 will be hosted and freely available on-line on the IFAC-PapersOnLine.net website and will be citable via an ISSN and a DOI. The best papers will be considered for publication in affiliated IFAC journals.

Venues

**South Lake Hotel
Changchun, Jilin**

South Lake Road 3798, Chaoyang District,
Changchun, P.R. China

Committee

**General Chair
Hong Chen**

Jilin University, China
Director of State Key Laboratory of
Automotive Simulation and Control

**Vice General Chair
Luigi del Re**

Johannes Kepler University, Austria

**NOC Chair
Hui Xie**

Tianjin University, China

**IPC Chair
Lars Eriksson**

Linköping University, Sweden

**IPC Vice-chair
Tielong Shen**

Sophia University, Japan

**General Secretary
Bingzhao Gao**

Jilin University, China
State Key Laboratory of
Automotive Simulation and Control

Event Schedule

Topics

19th
Sep.
(Wed.)

Registration on-site
Welcome reception

Opening ceremony
Plenary lecture
Parallel session

Semi-plenary 1&2
Parallel session

Dinner

20th
Sep.
(Thur.)

Plenary lecture
Parallel session

Semi-plenary 1&2
Parallel session

Dinner

21st
Sep.
(Fri.)

Plenary lecture
Parallel Session

Semi-plenary 1&2
Parallel Session

Banquet

22nd
Sep.
(Sat.)

With the global more and more stringent regulations, achieving cleaner, more fuel efficient and safer vehicles are urgent problems for solutions. In fact most novel technologies in the field of internal combustion engines, transmissions or alternative propulsion systems could not achieve their full potential without the help of automatic control. In turn, control design and validation need solid support from physical modeling and simulation in order to be effective. The E-CoSM 2018 will explore new trends in engine and powertrain control, simulation and modeling. The aim is to bring researchers and practitioners from industry and academia together to present and discuss the latest academic research developments relating to the basics and emerging topics, as well as industrial experience in deploying real world applications.

Topics of interest will be focused on, but not limited to:

1. System modeling and simulation frameworks for engine and powertrain control design, validation and calibration.
2. Model-based control, estimation and diagnostics for the new generations of CI and SI engines and their exhaust gas aftertreatment.
3. Modeling, optimization and control for hybrid and electrified vehicles and their components.
4. Thermal management for next generation vehicles.
5. Control design for 2WD, 4WD and high mobility multipurpose wheeled vehicles.
6. Applications of intelligent technologies to vehicle powertrains for supervision, energy management and diagnostics type.

Exhibition

Technical tours to visit China Faw Group Corporation R&D Center and Jilin University.

Traffic Information

After arriving at the Longjia International Airport, you could take a taxi to the South Lake Hotel or take the airport bus to the People's Square and then get to the south lake hotel station by bus No 6.



South Lake Hotel

IFAC Young Author Award

In order to stimulate the involvement of young scientists and engineers in IFAC, as well as to recognize top-level contributions of the younger generation in our field and to support their careers, IFAC will stimulate to have a Young Author Award at every IFAC symposium and conference.

For more detailed information please visit www.ascl.jlu.edu.cn/ecosm2018



Jingyuetan National Scenic Area



Changbai Mountains

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E-CoSM 2018

Call for Industrial Papers

IFAC aims at increasing the industrial participation at all IFAC conferences. In this conference, we strongly encourage and solicit submissions of industrial papers, either regular or invited.

Industrial papers require less technical details than normal papers to lighten the load on industrial engineers in preparing the manuscripts. Typically it is an extended abstract of 2 pages, however longer contributions are welcome.

To qualify as an industrial paper, the paper must have at least one of the following features:

- | Description of advanced modeling/control/automation methods or approaches that have been recently and successfully applied. Focus on the added value to the quality, safety, robustness, cost of installation, running and maintenance cost, lifetime, etc. of the process.

- | The plant, device or system is not a laboratory test bench but is used by the customer on a regular basis.

- | Application, research and development (R&D), and innovation activities.

- | Description of open problems and issues related to the lack of existing methodologies/technologies in the area of automatic control.

- | Description of a vision relevant to industrial applications.

Additionally, both the first author and corresponding author must be from the industry.

No product advertisement or company advertisement will be allowed.

A regular industrial paper is an industrial paper submitted by an author working in the industry according to the previous general lines; an invited industrial paper is an industrial paper that is invited by the organizer(s) of an invited session as part of the program of that session.

PAGE LIMITS

Typically an industrial paper (regular or invited) will consist of a 2 pages extended abstract; however, longer papers are welcome, up to a maximum of 6 pages. Longer papers will also be accepted, up to 9 pages, but a fee of 100 Euro for each extra page will be required. Papers of more than 9 pages will be rejected.

SUBMISSIONS

Submissions have to be made electronically within the Conference Manuscript Management System PaperCept, using the webpage of the conference.



Name: Dr. Jun Li

Affiliation: China FAW Group, China

Title: Why and how FAW develop own power-train control system



Name: Prof. Ilya V. Kolmanovsky

Affiliation: University of Michigan, USA

Title: Actuator and state constraints in automotive engines and powertrain systems what do we do about them?



Name: Prof. Christopher H. Onder

Affiliation: ETH Zurich, Switzerland

Title: ECMS - from HEV control back to engine emission control



Name: Prof. Dr.-Ing. Jakob Andert

Affiliation: RWTH Aachen University, Germany

Title: The intelligent powertrain: model-predictive control based on vehicle-to-X communication



Name: Prof. Minggao Ouyang

Affiliation: Tsinghua University, China

Title: Modeling and control of vehicle fuel cell engine and hybrid powertrains



Name: Dr. Shirou Yamaoka

Affiliation: Hitachi Ltd. R & D Group, Japan

Title: Hitachi automotive R&D activity towards the era of IoT



Name: Prof. Giorgio Rizzoni

Affiliation: Ohio State University, USA

Title: Connected and automated vehicles and advances in powertrain control to achieve unprecedented fuel economy gains