

# Advanced Vehicle Control

Recent advances in the automotive industry have created challenging new research and development opportunities for control scientists and engineers. Increased mobility as well as global trends toward safer and greener transportation have further underscored the need for even more pervasive implementation of sophisticated and innovative control algorithms and related technologies.

The control of vehicle dynamics, suspension and steering, traction and braking, engine/powertrain, identification and condition monitoring, active safety, autonomous driving, etc., are only some of the intriguing and exciting automotive control topics currently being researched in many academic and industrial settings.

To encourage greater involvement of the control community in automotive research and development, the Israel Association of Automatic Control is organizing a workshop to present some striking advanced vehicle control topics. The lectures, which will be delivered by a range of specialists, are slated to cover autonomous driving, powertrain control, stability of vehicle dynamics, vehicle subsystems advanced control, and actuation and sensing technologies.

The overarching goal of this workshop is to bring together a community of researchers and technologists interested in automotive control applications, and to lay the groundwork for collaborations, mutual support, publication venues, and funding.

Dr. Mario Jodorkovsky  
General Motors Israel

# The program

8:30	9:00	<b>Registration</b>	13:00	14:00	Lunch
9:00	9:15	<b>IAAC Yearly General Meeting</b>	14:00	15:00	<b>Automotive Powertrain Control: Opportunities and Challenges</b> Dr. Chen-Fang Chang, Lab Group Manager, Propulsion Systems Research Lab, General Motors Global Research & Development, USA
9:15	9:30	<b>Opening and Words of Welcome</b> Prof. Per-Olof Gutman, President Israel Association for Automatic Control and Dr. Mario Jodorkovsky, workshop organizer, General Motors Israel	15:00	15:45	<b>Dynamic Calibration of IC Engines from Optimal Test Signals, Structures and the Inverse Behaviour</b> Dr. Tom Shenton, University of Liverpool, England
9:30	10:30	<b>Driving the Future: Advanced Automotive Technology</b> Dr. Gary Smyth, Executive Director, Global R&D Laboratories General Motors Global Research & Development, USA	15:45	16:15	Coffee Break
10:30	11:00	Coffee Break	16:15	17:15	<b>Constrained Optimal Control Methods for Vehicle Control Problems in Intelligent Transportation Systems</b> Prof. Paolo Falcone, Chalmers University of Technology, Göteborg, Sweden
11:00	11:30	<b>Vision Sensing for Automotive Applications</b> Eyal Bagon, Mobileye			
11:30	12:00	<b>Look Ahead Information and its Relevance in Automotive Control Applications</b> Dr. Maxim Kristalny, Dept. of Mechanical Engineering, Technion	17:15	17:35	<b>Use of Sensorless Technology for Hub Motors in Electrical Cars</b> Dr. Ilan Cohen, Servotronics
12:00	12:30	<b>Challenges in the Development of Autonomous Agriculture Vehicles</b> Dr. Amir Shapiro, Dept. of Mechanical Engineering, Ben-Gurion University of the Negev	17:35	18:00	<b>Optimal Control of All-Wheel Drive Vehicles Using Virtual Suspension: a Planar Model</b> Prof. Zvi Shiller, Dept. of Mechanical Engineering and Mechatronics, Ariel University Center
12:30	13:00	<b>A Path Following Method of an Autonomous Off-Road Vehicle</b> Roy Jagger, Elbit Systems			

## טופס הרשמה

לכבוד  
האיגוד הישראלי לבקרה אוטומטית  
הפקולטה להנדסת חשמל  
קרית הטכניון, חיפה  
טל: 04-8294780; פקס: 04-8295757; 04-8295745

א.ג.נ.,

הנני מבקש/ת לרשום אותי ליום עיון בנושא:

### Advanced Vehicle Control

אשר ייערך במלון "דניאל" הרצליה, ביום ב' 14.1.2013

שם: \_\_\_\_\_

כתובת: \_\_\_\_\_

טלפון: \_\_\_\_\_

מקום עבודה: \_\_\_\_\_

טלפון: \_\_\_\_\_ פקס: \_\_\_\_\_

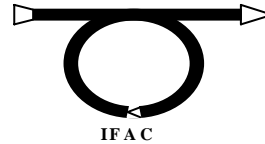
מצורפת המחאה ע"ס \_\_\_\_\_ ש"ח

תאריך \_\_\_\_\_ חתימה \_\_\_\_\_

דמי השתתפות:  
סטודנט (בזמן מלא) 200 ₪  
רישום מוקדם עד 3.1.2013 400 ₪  
רישום החל מ- 6.1.2013 450 ₪

קו 29, מתחנת הרכבת בהרצליה למלון, יוצא כל 10 דקות.

דמי ההשתתפות כוללים ארוחת צהרים, כיבוד וחומר מודפס.  
ההרשמה גם במקום, אם יותרו מקומות.



איגוד ישראלי לבקרה אוטומטית

איגוד ישראל לבקרה אוטומטית – איב"א  
Israel Association for Automatic Control

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הזמנה

ליום עיון בנושא:

### Advanced Vehicle Control

במלון "דניאל", הרצליה

יום ב', 14 בינואר 2013

יום העיון נתמך ע"י General Motors



ונערך בחסות משותפת של IEEE ישראל  
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