

Center for Sustainable
Future Mobility
Kick-off Symposium

6.05.2022 - ETH Zurich



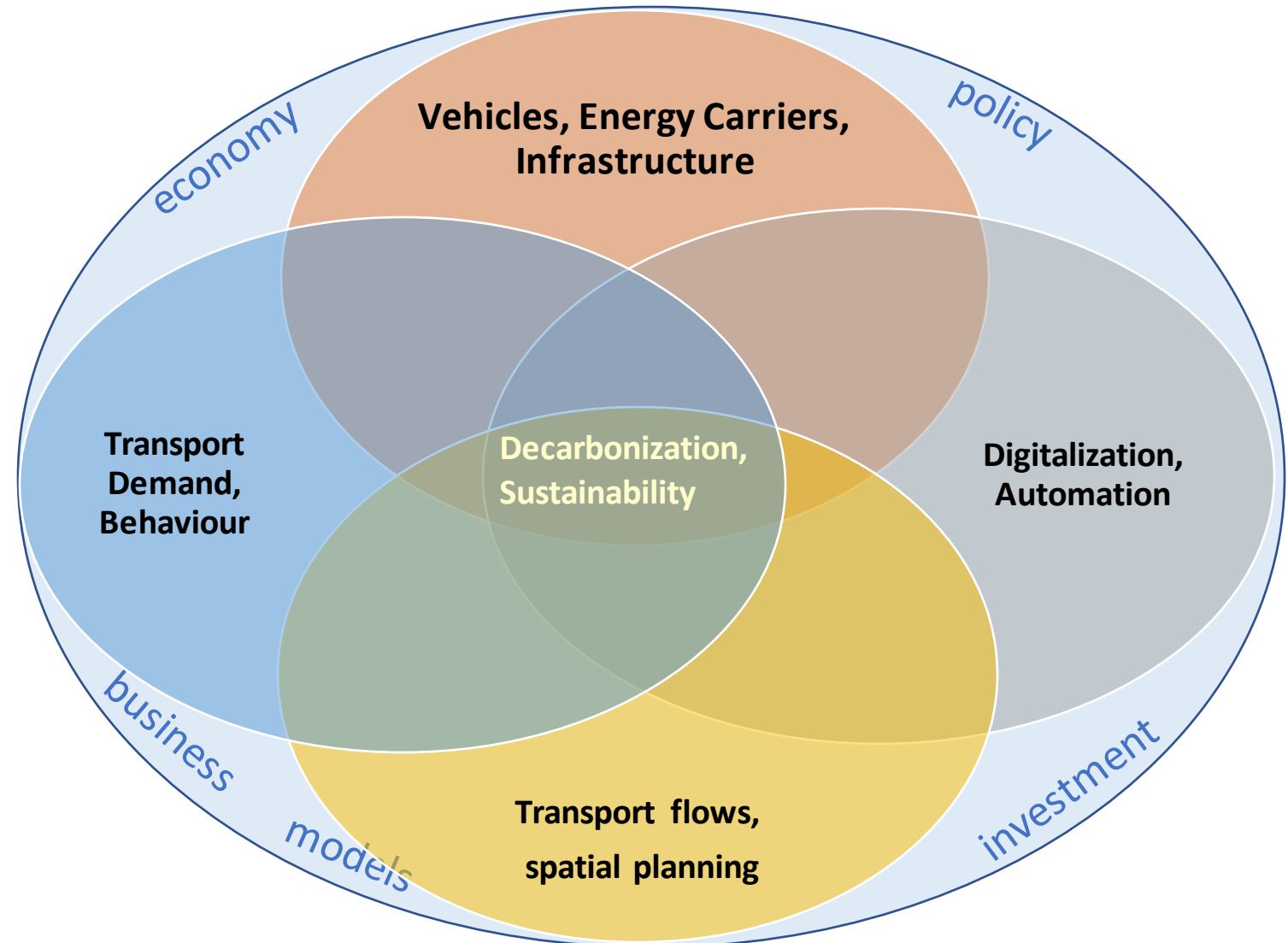
Main objectives of the CSFM


Launched this fall with 40 founding members (ETH Professors).

- Link groups with complementary competences in order to be able to **address grand challenges** regarding the future of the (Swiss and global) mobility systems
- Support and build new research initiatives with **a large-scale collaborative character**
- Establish seminar series and workshops to facilitate the exchange of skills and **dissemination of knowledge**
- Foster **cooperation** with industry / business / federal administration offices (e.g. UVEK)


Sustainable Future Mobility: the challenges ahead

- Energy demand
- CO2 emissions
- Space
- Congestion
- Safety
- Increasing demand
- Logistic
- Mobility as a Service
- External costs
- Sharing economy
- Regulation
- ...






Prof. J. Kolar
Power Electronic
Systems



Prof. C. Frank
Power Systems
Laboratory



Prof. R. Siegwart
Autonomous
Systems Lab




Prof. K. Schindler
Photogrammetry and
Remote Sensing



Prof. D. Kaufmann
Urban planning



Prof. B. Steffen
Climate Finances and
Policy




Prof. G. Hug
Power Systems
Laboratory



Prof. M. Lukatskaya
Power Systems
Laboratory



Prof. M. Hutter
Inst. of Robotics and
intelligent systems




Prof. E. Frazzoli
Dynamic systems
and control.




Prof. E. Chatzi
Structural Mechanics
and monitoring



Prof. T. Schmidt
Energy Policy




Dr. Miriam Elser
Vehicle Systems EMPA



Prof. S. Hellweg
Environmental
Impact



Prof. K. Axhausen
Traffic Planning
Transport Modelling




Prof. Fischer Yu, Visual
Intelligence and
Systems



Prof. B. Adey
Infrastructure-
management



Prof. M. Filippini
Energy & Public
Economics



Prof. A. Bardow
Energy and Process
System Engineering



Prof. T. Schmidt
Electrochemistry





Prof. F. Dörfler
Inst. for Automation




Prof. D. Hall
Innovative &
Industrial
Construction




Prof. A. Patt
Climate Policy



Prof. C. Onder
Inst. for dynamic
systems and control



Prof. Aldo Steinfeld
Renewable Energy
Carriers



Prof. M. Raubal
Geoinformation
Engineering




Prof. J. Lygeros
Automatic
Control Lab




Prof. S. Wagner
Logistics
Management



Prof. M. Stauffacher
Science – Society
interface




Prof. U. Grossner
Advanced Power
Semiconductors




Prof. P. Ermanni
Lightweight Systems



Prof. F. Corman
Transport Systems




Prof. M. Pollefeys
Inst. for Visual
Computing



Prof. O. Fink
Smart maintenance



Prof. T. Bernauer
International
environmental policy



Prof. N. Noiray
Power and
Propulsion
Systems




Prof. M. Mazzotti
Carbon Capture
and Storage



Dr. A. Kouvelas
Traffic Engineering



Prof. S. Tang
Computer Vision and
people tracking



Prof. I. Hajnsek
Remote sensing



Prof. V. Hoffmann
Sustainability and
Technology

Energy Efficiency / E-
Mobility / Battery

Autonomous
Driving / Robotics

Traffic/Transportation
Systems

Connected Car /
Security / Control /
Vision / Automation

Infrastructure /
Maintenance /
Logistics / Built env.

5/5/20
Policy / Economics

Swiss Mobility System Digital Twin

To support research and policy making

- Field-specific Digital Twin of Switzerland
- Increase the contribution of the center to society
- Allow the different groups to build on a high-quality base for their individual and joint research
- Partially financed by the center's basic funding, additional funds to be acquired asap.



Swiss Mobility System Digital Twin



- **Jascha Grübel** will join the CSFM in July 2022 to launch the Digital Twin project
PhD candidate at the Chair of Cognitive Science
BSc, MSc ETH in Visual Computing & MSc ISTP City Science.
- Strategic planning and direction of this integrative projects will be provided by a dedicated [CSFM internal Board](#) (Begleitgruppe).

Swiss Mobility System Digital Twin

To support research and policy making – research examples:



- People and freight transport flows in adequate spatial and temporal detail depending on Swiss and European economic development, structure, supply chains, etc.
- Potential locations of production sites of renewable electricity incl. conversion to synthetic fuels (incl. geomorphological conditions, transmission grids, etc.)
- Co-optimization of traffic flows with charging stations, e-catenary system corridors, hydrogen logistics, other relevant infrastructure, etc.
- Empirical insights from behavior/ decision making of consumers/ investors on mobility-related matters.
- Fleet size and type forecasting.

Kick-off Symposium

Center for Sustainable Future Mobility

- 08:45 Welcome address from Prof. Dr. Detlef Günther, Vice President for Research at ETH Zurich
- 08:55 Kick-off by Prof. Dr. Kay W. Axhausen, CSFM Chairman
- 09:05 Keynote by Prof. Dr. Sonia Yeh, Chalmers University of Technology, Gothenburg, Sweden:
- **09:50 Break and poster session**
- 10:20 Mobility Initiative Project 1: Prof. Dr. Eleni Chatzi
- 10:40 Mobility Initiative Project 2: Prof. Dr. Francesco Corman
- 11:00 Mobility Initiative Project 3: Prof. Dr. Martin Raubal,
- 11:20 Keynote by Prof. Dr. Harvey Miller, The Ohio State University, Columbus, Ohio
- 12:05 Panel discussion
- 12:55 Closure
- **13:00 Networking lunch and poster session**
- **14:30 Optional session: Speed-talks by PhD students and Postdocs**