

Intelligent Machines? – Self-Organized Nonlinear Dynamics of Machines across Scales

International Workshop 20 - 24 June 2022

From the internet of things to smart phones and from autonomous vehicles to robotic medicine, the world we interact with becomes increasingly autonomous.

We aim to bring together researchers from nonlinear dynamics and complex systems science with those from smart systems' design and robotic engineering to further our understanding of the dynamics of complex multi-dimensional "intelligent" machines.

Topics:

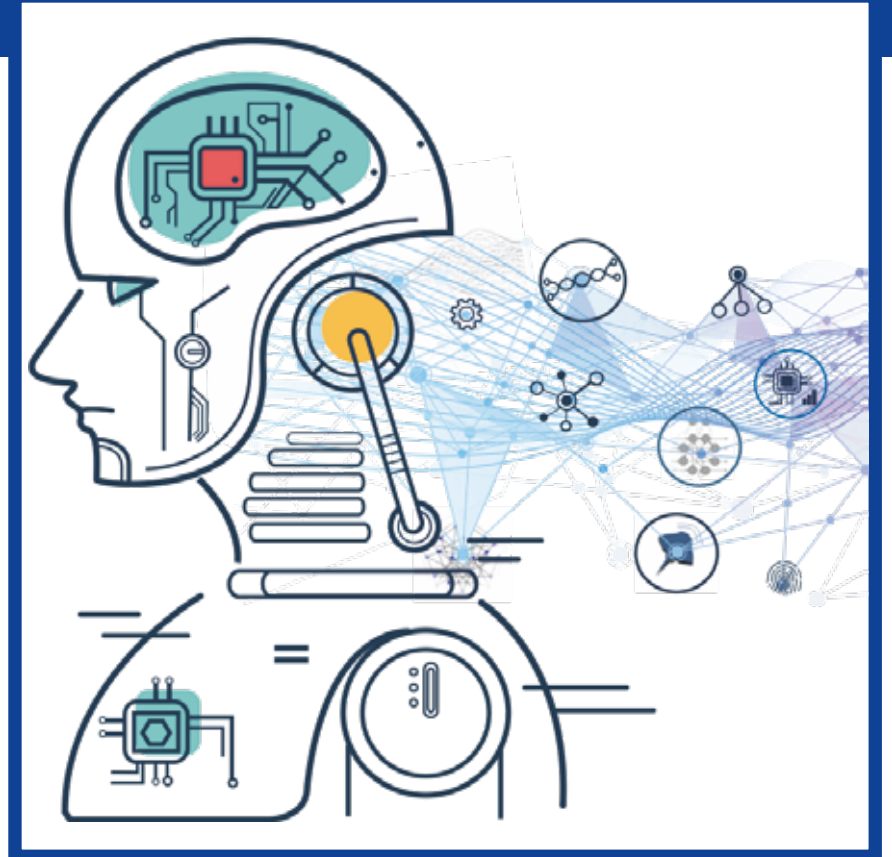
- collective dynamics of machines
- data analytics and machine learning for real world interactions
- smart materials
- soft robotics
- micro and nanosystems and robots
- autonomous locomotion
- embodied AI
- interacting infrastructure
- nonlinear vibrations
- distributed imaging and sensing
- theory for systems design
- interacting machines
- robotic medicine
- complex machine dynamics

Applications received before 24th April 2022 are considered preferentially.

We plan for a **hybrid workshop** with a number of participants on-site and the others connected remotely. Online attendance will be possible in any case. The organizers will inform about an option of on-site attendance at a later stage.

For on-site participation the registration fee is 140 Euro; costs for accommodation and meals will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses.

No fee for remote participation.



Invited speakers:

(*to be confirmed)

Andrew Adamatzky (UK)*
Christian Bettstetter (AT)
Thies Büscher (DE)
Chokri Cherif (DE)*
Ingo Fischer (ES)*
Oleg Gendelman (IL)
Claudius Gros (DE)
George Haller (CH)
Sabine Hauert (UK)*
E.-F. Markus Henke (DE)
Jennifer Hicks (US)*
Auke Jan Ijspeert (CH)
Johannes Klinglmayr (AT)
Wei Lu (US)*
Mariana Medina Sanchez (DE)
Radhika Nagpal (US)*
Sebastian Oberst (AU)

Carlo Ratti (US)*
Andreas Richter (DE)
Philipp Rothmund (DE)*
Yulia Sandamirskaya (DE)
Metin Sitti (DE)
Alexander Vakakis (US)
Thomas Wallmersperger (DE)
Robert Wood (US)*

Scientific coordinators:

Norbert Hoffmann
(Hamburg, Germany)
Poramate Manoonpong
(Odense, Denmark)
Marc Timme
(Dresden, Germany)

Organisation:

Maria Voigt,
MPIPKS Dresden

For further information please contact:

Visitors Program – Maria Voigt
MPI for the Physics of Complex Systems
Nöthnitzer Str. 38, D-01187 Dresden
Tel: +49-351-871-1932
intema22@pks.mpg.de
www.pks.mpg.de/intema22