

**European Network on Nonsmooth Dynamics**  
**9th Annual Symposium, Toulouse**  
**20th – 22nd September, 2022**

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- **Session 1: Opening and Keynote**

**Tuesday 20th September, 09h45 – 12h00**

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09h45–10h30	Welcome reception
10h40–10h55	<i>Opening remarks about ENNSD</i>
11h00–12h00	<i>Acceleration of first-order optimization algorithms via damped inertial dynamics</i> <i>Hedy Attouch (IMAG Université Montpellier, CNRS, FR)</i>

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- **Lunch break on site**

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- **Session 2: Optimization and dynamical systems**

**Tuesday 20th September, 14h00 – 17h00**

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14h00–14h50	<i>FISTA is an automatic geometrically optimized algorithm for strongly convex functions</i> <i>Aude Rondepierre (IMT &amp; INSA Toulouse, FR)</i>
14h50–15h40	<i>Provable guarantees for neural network-driven dynamical systems</i> <i>Mahyar Fazlyab (Johns Hopkins University, USA)</i>
15h40–16h10	Refreshments
16h10–17h00	<i>Second order cone programming for frictional contact mechanic using interior point algorithm</i> <i>Paul Armand (University of Limoges, FR)</i>

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- **Session 3: Stability analysis and Lyapunov functions**

**Wednesday 21st September, 09h00 – 12h30**

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09h00–09h45	<i>Computation of Lyapunov functions for switched systems and differential inclusions</i> <i>Sigurður Hafstein (University of Iceland, IS)</i>
09h45–10h30	<i>Path-complete Lyapunov functions: graph-theory and algebraic geometry for controlling complex systems</i> <i>Raphaël Jungers (Université Catholique de Louvain, BE)</i>
10h30–11h00	Coffee break
11h00–11h45	<i>Polynomial sums of squares for stability analysis of conic complementarity systems</i> <i>Didier Henrion (LAAS–CNRS, University of Toulouse, FR &amp; Czech Tech. University, CZ)</i>
11h45–12h30	<i>Novel projection-based controllers to overcome fundamental performance limitations</i> <i>Maurice Heemels (TU Eindhoven, NL)</i>

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- **Lunch break on site**

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- **Session 4: Control synthesis: optimality, numerics, and regulation**  
**Wednesday 21st September, 14h00 – 17h30**

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14h00–14h45	<i>Finite elements with switch detection (FESD) for numerical optimal control of Fillippov systems</i> <i>Armin Nurkanovic (University of Freiburg, DE)</i>
14h45–15h30	<i>Time-freezing for optimal control of systems with state jumps</i> <i>Moritz Diehl (University of Freiburg, DE)</i>
15h30–16h00	Refreshments
16h00–16h45	<i>Modeling and control of contact interactions in robotics</i> <i>Justin Carpentier (INRIA Paris, FR)</i>
16h45–17h30	<i>A nested set-valued controller for robust output regulation</i> <i>Felix Miranda-Villoto (INRIA Grenoble-Alpes, FR)</i>

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- **Session 5: Modeling, analysis, and solvers**  
**Thursday 22nd September, 09h00 – 12h00**

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09h00–09h45	<i>On the spatial nonsmoothness of beam-to-beam contact problems: Analytical and numerical approaches</i> <i>Olivier Brüls (University of Liège, BE)</i>
09h45–10h15	Coffee break
10h15–11h00	<i>Modeling the root growth: an optimal control approach</i> <i>Michèle Palladino (University of L'Aquila, IT)</i>
11h00–11h45	<i>PyNSD: solvers, algorithms and benchmark systems for nonsmooth dynamics</i> <i>Giuseppe Capobianco (University of Erlangen, DE) &amp; Remco Leine (University of Stuttgart, DE)</i>
11h45–12h00	Closing remarks

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- **Lunch break on site**

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