19th French-German-Swiss conference on Optimization

September 2019, Nice

From September 17 to 20, 2019, the 19th edition of the bi-annual applied math conference that gathers the German and French communities of optimisation in the large, took place in Nice. This series of conferences began at Oberwolfach in 1980 and has been gathering since, every other year, researchers from Germany, France, and from a third invited country. The two previous editions had taken place in London (2015, the invited country was England) and Paderborn (2017, the invited country was Italy). In 2019, the invited country was Switzerland. More than 150 mathematicians participated to the event. The conference benefited from the scientific patronage and the support of the following institutions:

– Société de Mathématiques Appliquées Industrielles (including the thematic group SMAI-MODE in charge of optimisation)

– Programme Gaspard Monge pour l'Optimisation (PGMO — program of Fondation Mathématique Jacques Hadamard)

– Groupement de Recherche Mathématiques de l'Optimisation et Applications (GdR 3273 of CNRS)

– Groupement de Recherche Jeux (GdR 2932 of CNRS)

During the conference, twelve plenary talks were scheduled, each of the three organising countries having selected four speakers:

– Amitabh Basu (Baltimore), Representability of optimization models

– Christian Boehm (Zurich), Wavefront inversion from ultrasound to global scale

– Claudia D'Ambrosio (Palaiseau), Global optimization for MINLP with separable non-convexities

– Moritz Diehl (Freiburg), A survey of generalized Gauss-Newton and sequential convex programming methods

– Hélène Frankowska (Paris), Second order variationnal analysis in optimal control

– Michael Hintermüller (Berlin), Generalized Nash equilibrium problems with application to spot markets with gas transport

– Rolf Krause (Lugano), Multilevel optimization and non-linear preconditioning

– Jérôme Malick (Grenoble), Nonsmoothness can help: sensitivity analysis and acceleration of proximal algorithms

- Ira Neitzel (Bonn), Optimal control of regularized fracture propagation problems

- Marc Pfetzsch (Darmstadt), Resilient and efficient layout of water distribution networks

- Sebastian Pokutta (Atlanta), Smooth constraint convex minimization via conditional gradients

- Rico Zenklusen (Zurich), Analyzing network robustness via interdiction problems

More than 130 talks were scheduled along three parallel sessions, including the minisymposia hereafter:

- Recent trends in nonlinear optimization (S. Goettlich & A. Walther)

- Singular perturbations and turnpike in optimal control problems (J. Gergaud)

- Optimization and optimal control for biological models (J.-L. Gouzé)

- Nonlinear optimization methods and their global convergence rates (G. Grapiglia)

- Game theory approaches in inverse problems and control (A. Habbal & A. Borzi)

- Mean field games: new trends and applications (D. Tonon & F. Silva)

- Discrete optimization and game theory (F. Meunier)

- Kernel methods in Bayesian optimisation and integration (L. Pronzato & S. Da Veiga)

- Non-smooth optimization: theory and applications (D. Noll & A. Walther)

- Continuous optimization techniques for image processing applications (S. Rebegoldi & E. Morotti)

- Optimal control methods and applications (H. Maurer & S. Pickenhain)

- Optimization with PDE constraints (M. Ulbrich)

On top of the help of the aforementioned institutions, the conference also benefited from the logistic and financial support of

- LJAD (Lab. Mathématiques Jean Alexandre Dieudonné, CNRS), in particular from the teams ANEDP and GAD

- I3S (Lab. Informatique, Signaux et Systèmes de Sophia Antipolis, CNRS)

– Inria Sophia Antipolis Méditerranée

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Last but not least, the next edition of the series is planned for 2022 in Porto, the invited country being Portugal.