List of Publications: Thomas M. Surowiec

The following lists comprise all publications, currently submitted preprints, and additional scientific contributions as of January 11, 2021.

PUBLICATIONS (Journal Articles & Book Chapters)

1. *Computing Multiple Solutions of Topology Optimization Problems*, to appear in SIAM J. Sci. Comput. (w/ P.E. Farrell, I. Papadopoulos)

2. *On Quantitative Stability in Infinite-Dimensional Optimization under Uncertainty*, to appear in Optimization Letters (w/ M. Hoffhues, W. Römisch)

3. *A Primal-Dual Algorithm for Risk Minimization*, to appear in Math. Prog. Ser. A (w/ D.P. Kouri)

4. *Wavelet-based approximations of pointwise bound constraints in Lebesgue and Sobolev spaces*, to appear in IMA J. Numer. Anal.
URL: https://doi.org/10.1093/imanum (w/ S. Dahlke)

5. *An Interior-Point Approach for Solving Risk-Averse PDE-Constrained Optimization Problems with Coherent Risk Measures*, to appear in SIAM J. Optim.
https://doi.org/10.1137/19M125039X (w/ S. Garreis, M. Ulbrich)

6. *Risk-Averse Optimal Control of Semilinear Elliptic PDEs*, ESAIM: COCV, 26 (2020), no. 53 (w/ D.P. Kouri)

7. *Epi-Regularization of Risk Measures*, Math. Oper. Res., 45 (2020), no. 2, 774–795 (w/ D.P. Kouri)

8. *Deflation for Semismooth Equations*, Optim. Method. Softw.,
DOI: 10.1080/10556788.2019.1613655 (w/ P.E. Farrell, M. Croci)

9. *Optimization of a multiphysics problem in semiconductor laser design*, SIAM J. Appl. Math. 79 (2019), no. 1, 257–283. (w/ L. Adam, M. Hintermüller, D. Peschka)

10. *A Semismooth Newton Method with Analytical Path-Following for the H^1-Projection onto the Gibbs Simplex*, IMA J. Numer. Anal. 39 (2019), no. 3, 1276–1295 (w/ L. Adam, M. Hintermüller)

11. *A PDE-constrained optimization approach for topology optimization of strained photonic devices*, Optim. Eng. 19 (2018), no. 3, 521–557., (w/ L. Adam, M. Hintermüller)

12. *Numerical Optimization Methods for the Optimal Control of Elliptic Variational Inequalities*, In: Antil H., Kouri D.P., Lacasse MD., Ridzal D. (eds) Frontiers in PDE-Constrained Optimization. The IMA Volumes in Mathematics and its Applications, vol 163. (2018) Springer, New York, NY

13. *Existence and Optimality Conditions for Risk-Averse PDE-Constrained Optimization*, SIAM/ASA J. Uncertainty Quantification 6 (2), (2018) 787-815. (w/ D.P. Kouri)

14. *On the Directional Differentiability of the Solution Mapping for a Class of Variational Inequalities of the Second Kind*, Set-Valued Var. Anal 26 (3) (2018) 631–642. (w/ M. Hintermüller)

15. *Finite Horizon Model Predictive Control of Electrowetting on Dielectric with Pinning*, Interface Free Bound. 19 (1), (2017) 1-30. (w/ H. Antil, M. Hintermüller, R.H. Nochetto, and D. Wegner)

16. *A Bundle-Free Implicit Programming Approach for a Class of Elliptic MPECs in Function Space*, Math. Program. 160 (1-2), (2016), 271-305 (w/ M. Hintermüller)

17. *Risk-Averse PDE-Constrained Optimization Using the Conditional Value-At-Risk*, SIAM J. Optim., 26(1), (2016), 365-396. (w/ D.P. Kouri)

18. *Generalized Nash Equilibrium Problems in Banach Spaces: Theory, Nikaido–Isoda-Based Path-Following Methods, and Applications*, SIAM J. Optim., 25(3), (2015), 1826-1856. (w/ M. Hintermüller and A. Kämmler)

19. *Several Approaches for the Derivation of Stationarity Conditions for Elliptic MPECs with Upper-Level Control Constraints*, Math. Prog. Ser. A., 146(1-2) (2014), 555-582. (w/ M. Hintermüller and B.S. Mordukhovich)

20. *A PDE-constrained Generalized Nash Equilibrium Problem with Pointwise Control and State Constraints*, Pac. J. Opt., 9(2), (2013) 251-273. (w/ M. Hintermüller)

21. *On Regular Coderivatives in Parametric Equilibria with Non-Unique Multipliers*, Math. Prog. Ser. B., 136(1) (2012), 111-131. (w/ R. Henrion and J.V. Outrata)

22. *Analysis of M-stationary points to an EPEC modeling Oligopolistic Competition in an Electricity Spot Market*, ESAIM: COCV 18 (2012) 295-317. (w/ R. Henrion and J.V. Outrata)

23. *First Order Optimality Conditions for Elliptic Mathematical Programs with Equilibrium Constraints via Variational Analysis*, SIAM J. Optim., 21(4), (2011) 1561-1593. (w/ M. Hintermüller)

24. *On Calmness Conditions in Convex Bilevel Programming*, Applicable Analysis, 90 (2011) 951-970. (w/ R. Henrion)

25. *A Note on the Relation between Strong and M-stationarity for a Class of Mathematical Programs with Equilibrium Constraints*, Kybernetika, 46 (2010) 423-434. (w/ R. Henrion and J.V. Outrata)

26. *On the Co-Derivative of Normal Cone Mappings to Inequality Systems*, to appear in: Nonlinear Analysis: Theory, Methods & Applications (2008). (w/ R. Henrion and J.V. Outrata)

27. *Subdivision of Edges and Matching Size*, Ars Combinatoria, 84 (2007) 141 - 153. (w/ D. Bauer and E. Schmeichel)

28. *Tutte sets in graphs II: The complexity of finding Maximum Tutte sets*, Discrete Applied Math., 155 (2007) 1336 - 1343. (w/ D. Bauer, H. J. Broersma, N. Kahl, A. Morgana, and E. Schmeichel

PREPRINTS   (Submitted & In Revision)

29. *A Wavelet-Based Approach for the Optimal Control of Non-Local Operator Equations*, In revision at SIAM J. Sci. Comput. (w/ S. Dahlke, H. Harbrecht)

30. *Measure-Valued M-Estimators: Formulation, Existence and Connections to Robust Bayesian Inference*, Submitted (w/ D.P. Kouri)

31. *Uncertainty Quantification in Image Segmentation using the Ambrosio-Tortorelli Approximation of the Mumford-Shah Energy*, In Revision at Journal of Mathematical Imaging and Vision (w/ M. Hintermüller, S.-M. Stengl)

OTHER   (Newsletters, Interdisciplinary, In Preparation)

32. *PDE-Constrained Optimization under Uncertainty*, SIAG/OPT Views and News, Volume 25 Number 2, December 2017 (w/ D.P. Kouri)

33. *Suturing of the laser resection area is recommended over a depth of 2 cm in an experimental porcine lung model*, Journal of Thoracic Disease 10(9):5339-5345 (w/ A. Kirschbaum, A. Pehl, A. Gockel, D.K. Bartsch, und N. Mirow)

34. *Local lung coagulation post resection - an ex-vivo porcine model*, submitted to Lasers in Medical Science (w/ A. Kirschbaum, A. Pehl, T. Wiesmann, D.K. Bartsch, N. Mirow)

35. *Explicit Stationarity Conditions and Solution Characterization for Equilibrium Problems with Equilibrium Constraints*, Doctoral Thesis (doc. rer. nat. Mathematics), January 2010, Humboldt-Universität zu Berlin.

36. *Stability of Stochastic Optimization Problems with Stochastic Dominance Constraints*, Master's Thesis (M.S. Stochastic Systems: Analysis and Optimization), May 2006 Stevens Institute of Technology.