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Dr Alain Zemkoho PhD

Research Fellow

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About

Alain is a Research Fellow in Optimization. His research interests are in Mathematical Optimization and Operational Research. He is particularly interested in nonsmooth and nonconvex optimization with their applications to multilevel and transportation problems.

Before coming to the University of Birmingham, Alain was a Research Associate at TU Bergakademie Freiberg, Germany. He has also spent research stays at Wayne State University, USA (2011) and KU Leuven, Belgium (2013).

Qualifications

- PhD in Mathematics (with summa cum laude), TU Freiberg, Germany, 2012
- MSc in Mathematics, University of Yaounde I, Cameroon, 2007

Biography

One of Alain's recent research achievements is the translation of some of the well-established theory from Standard Optimization to Bilevel Optimization. He has presented his work at about 20 International Conferences, Workshops and Seminars on Applied Mathematics and Optimization. He has also co-organized and chaired sessions in a number Scientific Meetings.

Alain is also a Professional Mathematics Teacher (Teaching Diploma obtained in 2004) and, as from 2013, he is qualified for Associate Professorship (French National Council of Universities).

Teaching

Teaching Programmes

- Bilevel Optimization
- Nonsmooth Optimization
- Nonlinear Optimization

Research

Research Themes

- Conic optimization
- Bilevel programming and related topics
- Minmax programming
- Stability analysis in optimization

Other activities

Referee service for the following Journals:

- Journal of Optimization Theory and Applications
- Mathematical Programming
- European Journal of Operational Research
- Transportation Science
- Journal of the Operations Research Society of China
- Journal of the Operational Research Society UK
- Applied Mathematics and Computation

Publications

- Dempe, S., Mordukhovich, B.S., Zemkoho, A.B., Necessary optimality conditions in pessimistic bilevel programming, **Optimization**, to appear:
- Zemkoho, A.B., A simple approach to optimality conditions in minmax programming, **Optimization**, to appear

- Dempe, S., Zemkoho, A.B. (2013), Bilevel programming: reformulations, constraint qualifications and optimality conditions, **Mathematical Programming**, 138: 447-473
- Dempe, S., Gadhi, N., Zemkoho, A.B. (2013), New optimality conditions for the semivectorial bilevel optimization problem, **Journal of Optimization Theory and Applications**, 157: 54-74
- Dempe, S., Mordukhovich, B.S., Zemkoho, A.B. (2012), Sensitivity analysis for two-level value functions with applications to bilevel programming, **SIAM Journal on Optimization**, 22: 1309–1343
- Dempe, S., Zemkoho, A.B. (2012), On the Karush-Kuhn-Tucker reformulation of the bilevel optimization problem, **Nonlinear Analysis: Theory, Methods & Applications**, 75: 1202–1218
- Dempe, S., Zemkoho, A.B. (2012), Bilevel road pricing: theoretical analysis and optimality conditions, **Annals of Operations Research**, 196: 223–240
- Dempe, S., Zemkoho, A.B. (2011), The generalized Mangazarian-Fromowitz constraint qualification and optimality conditions for bilevel programs, **Journal of Optimization Theory and Applications**, 148: 46–68

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