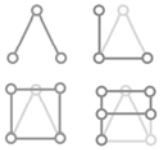


ALGORITHMIC OPTIMIZATION

The Research Training Group on Algorithmic Optimization (ALOP)
is proud to sponsor the Collaborative Research Workshop

Women in Shape 3 (WiSh)
Modeling Objects in 2D and 3D

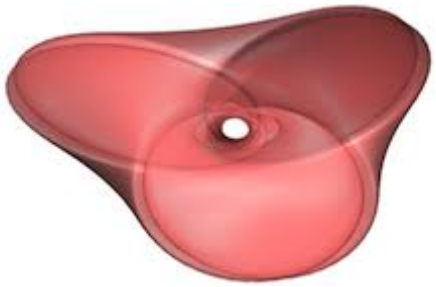
July 16—July 20, 2018
Robert-Schuman-Haus, Trier, Germany

www.alop.uni-trier.de

Welcome to Women in Shape (WiSh)
a Collaborative Research Workshop

The focus of WiSh is to carry out a few designated research projects that will be initiated during the workshop and lead to a viable collaboration among the participants.

The research training group ALGORITHMIC OPTIMIZATION proudly sponsors this women only workshop which will result in further research, education and publications in the field of shape modeling.



Organizers:

Kathryn Leonard, Occidental College
Géraldine Moran, University of Toulouse
Kathrin Welker, Trier University

Program: Monday, July 16, 2018

06:30—09:00	*Breakfast*	
09:00— 09:45	**Registration**	Lobby (near front desk)
10:00—10:30	**Opening Remarks** *Welcome (Géraldine Morin and Kathrin Welker)* *WiSh 2013: How it started (Kathryn Leonard)*	Room S14
10:30—12:00	**Joint meeting** Introduction of Projects Introduction of Participants	Room S14
12:30—14:00	*Lunch*	
14:00—15:30	**Project Work** Group I Group II Group III	 Room S13 Room S12 Room S14
15:45—19:30	**Social Event 1: City tour** Meeting Point: 15:45 in front of Robert-Schuman-Haus Guided City tour: 17:00—19:00	
20:00—21:30	*Dinner*	

Porta Nigra

Program: Tuesday, July 17, 2018

06:30—09:30		*Breakfast*
10:00—12:00	**Project Work**	
	Group I	Room S13
	Group II	Room S12
	Group III	Room S14
12:30—14:00		*Lunch*
14:00—16:00	**Project Work**	Room S12, S13, S14
16:00—16:30		*Coffee Break*
16:30—18:00	**Project Work**	Room S12, S13, S14
18:30—20:00		*Dinner*

Program: Wednesday, July 18, 2018

06:30—09:00	*Breakfast*	
9:00—10:00	**Project Work**	
	Group I	Room S13
	Group II	Room S12
	Group III	Room S14
10:00-10:45	**Joint Meeting**	Room S14
	Intermediate Project Progress Reports	
11:15-19:00	**Social Event 2: Boat Trip to Saarburg**	
	Meeting Point: 11:15 in front of Robert-Schuman-Haus	
	Departure Trier: 12:00; Arrival Saarburg: 14:00	
	Free time exploring Saarburg: 14:00—16:00	
	Departure Saarburg: 16:00 Arrival Trier: 18:00	
19:00-20:30	*Dinner*	

Program: Thursday, July 19, 2018

06:30—09:30		*Breakfast*
10:00—12:00	**Project Work**	
	Group I	Room S13
	Group II	Room S12
	Group III	Room S14
12:30—14:00		*Lunch*
14:00—16:00	**Project Work**	Room S12, S13, S14
16:00—16:30		*Coffee Break*
16:30—18:00	**Project Work**	Room S12, S13, S14
18:30—20:00		*Dinner*

Program: Friday, July 20, 2018

06:30—09:30		*Breakfast*
10:00—12:00	**Project Work**	
	Group I	Room S13
	Group II	Room S12
	Group III	Room S14
12:30—14:00		*Lunch*
14:00—16:00	**Project Work**	Room S12, S13, S14
16:00—16:30		*Coffee Break*
16:30—17:30	**Joint Meeting**	Room S14
	Closing report on progress of projects	
17:45—18:45		*Dinner*
19:00—22:00	**Social Event 3: Wine Tasting and Tour of Wine Cellar**	
	Meeting Point: 19:00 in front of Robert-Schuman-Haus	
	Wine Tasting: 19:00—21:00	

Project I: Shape optimization combined with stochastic modelling

Supervised by Laura Bittner[1] and Kathrin Welker[2]

Shape optimization problems arise in technological processes and are often modelled under partial differential equality constraints. A lot of real world accidents show that stochastic aspects should be included in the modelling process. For example, a recent accident occurred on a flight with Southwest Airlines in April 18, 2018. An engine on the plane broke apart shortly after takeoff even though it was inspected two days before.[3]

In this project, we formulate a specific stochastic shape optimization model and investigate it under analytical and computational aspects in view of a suitable simulation.

Background material will be sent for reading before the workshop.

Project work will take place in Room S13

Participants:

Laura Bittner
Caroline Geiersbach
H. Alicia Kim
Karen Estefania Loayza Romero
Kathrin Welker

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[1]Universität Wuppertal, Germany, E-Mail: bittner@uni-wuppertal.de

[2]Universität Trier, Germany, E-Mail: welker@uni-trier.de

[3]https://www.nytimes.com/2018/04/18/business/southwest-plane-engine-failure.html

Project II: Exploring feature representations for 3D shape segmentation using deep learning

Supervised by Ilke Demir[1]

Although deep learning approaches become popular solutions for semantic segmentation and recognition tasks in several 2D domains, the lack of uniform representations in 3D domains slows down the development of such methods for 3D shape segmentation. In this working group, we would like to explore (i) several representations (multi-view, volumetric, point-based, surface-based) and 3D formats, for segmentation of models in (ii) different domains (face, body, architecture, nature), and (iii) their feasibility for different deep learning models (hierarchical, graph-based, convolutional, capsule-based).

The topic will be narrowed down based on the experience and interest of the participants. Group members are expected to have familiarity with deep learning and 3D geometry processing.

Reading material will also be sent before the workshop as a background setup.

Project work will take place in Room S12

Participants:

Wafia Boubguira
Ilke Demir
Alaa Mustafa Hassan Hassan
Kathryn Leonard
Athina Panotopoulou

[1]Facebook Research, USA, E-Mail: idemir@purdue.edu

Project III: Modelling with splines skeletons

Supervised by Géraldine Morin[1]

In this group, we propose to model considering skeleton representations of higher continuity. Skeleton based representation offer a intuitive model of 2D and 3D shapes. Moreover, this representation provides a model of lower dimension. Most skeleton approximations consider piecewise linear representation, and we shall consider here medial axis curves (or surfaces in 3D) of higher order, modelled in particular by spline functions. To be able to model circular shapes, more general splines (like circular splines) will be considered. We will consider shapes in 2D to start with, and then in 3D where we will try to tackle the curve and the surface setting.

References will be sent out for reading before the workshop.

Project work will take place in Room S14

Participants:

Amelie Fondevilla
Camilla Hahn
Géraldine Morin
Dana Rahbani
Veronica Schulze

[1]Université de Toulouse, France, E-Mail: morin@n7.fr

Location

The conference will take place at the Robert-Schuman-Haus located
Auf der Jüngt 1 in 54293 Trier.
www.tagen-bistum-trier.de

Whatever your means of transport, Trier is centrally located and within easy reach from your place of origin

Trier lies at the heart of Europe, on the outskirts of the SaarLorLux (Saarland, Lorraine, Luxembourg) region. It has good motorway links. It can be reached by rail via the Cologne-Koblenz or Saarbrücken-Mannheim lines. Those arriving by air can choose between three airports, all of which can be reached by car or shuttle bus within 30 to 80 minutes. Frankfurt am Main, Cologne, Bonn, Aachen and Liège (Belgium) and their regions are no more than two hours away by car; the cities of Kaiserslautern and Saarbrücken are 60 to 80 minutes away.

Arriving by plane

Luxembourg-Findel Airport
Luxembourg Airport is only a 30-minute drive away along the motorway.

Frankfurt-Hahn Airport
The nearest German airport, Frankfurt-Hahn, is 50 minutes away by shuttle bus or car.

Frankfurt/Main Airport
In this case, the journey takes appr. 3 hours by car, shuttle bus or rail.

Arriving by train

It's also easy to take the train to Trier from many German and European cities. Information and railway connections are available at www.bahn.de

Your journey from the train station
The Robert-Schuman-Haus has limited bus access and it may be adviseable to travel by taxi from the train station.

ALGORITHMIC OPTIMIZATION

We are hiring!

The Research Training Group on Algorithmic Optimization will begin recruiting the next group of PhD Students in the fall of 2018 with a potential start date of April 1, 2019.

Please keep referring to our website

alop.uni-trier.de/job-opening/

for further details.

RTG ALOP and Trier University constantly strive to increase the share of women in research and, therefore, strongly encourage women to apply.

Trier University is a certified family friendly employer. Provided equal qualifications are demonstrated, applicants with disabilities will be preferred.

Upcoming Conferences:

Summer School 2018—Mixed Integer Nonlinear Programming

August 13, 2018 through August 16, 2018

EUCCO 2018—5th European Conference on Computational Optimization

September 10 through September 12, 2018

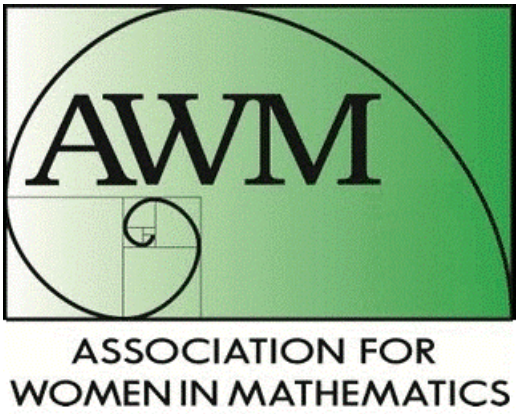
Please refer to our website

alop.uni-trier.de

for further details.

Participants	*Affiliation*
Laura Bittner	Bergische Universität Wuppertal
Wafia Boubguira	Larbi Ben M'Hidi
Ilke Demir	Facebook Research
Amelie Fondevilla	Universite Grenoble Alpes
Caroline Geiersbach	Universität Wien
Camilla Hahn	Bergische Universität Wuppertal
Alaa Mustafa Hassan Hassan	University of Kirkuk
H. Alicia Kim	University of California San Diego
Kathryn Leonard	Occidental College
Karen Estefania Loayza Romero	Technische Universität Chemnitz
Géraldine Morin	University of Toulouse
Athina Panotopoulou	Dartmouth College
Dana Rahbani	University of Basel
Veronica Schulze	Universität Paderborn
Kathrin Welker	Trier University

We gratefully acknowledge the support of the



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