

Selection Attended Conferences and Invited Presentations of dr.ir.R. Duits until June 2018

Dr.ir. R.Duits has attended several conferences for presentations, among which:

- Scale Space Conference 2003, Isle of Skye, Scotland (poster).
- IASTED Conference 2002, Kwai, Hawaii, USA (1 oral presentation).
- Workshop on Deep Structure, Singularities, and Computer Vision 2005, Maastricht, The Netherlands (*Image Reconstruction from Linear Features based on Sobolev Norms*).
- Early Cognitive Vision Workshop 2004, Isle of Skye, Scotland (1 poster).
- Mathematics and Image Analysis Conference 2004, Paris, France (invited presentation: *Invertible Orientation Bundle Functions based on Generalized Wavelet Theory*).
- Seventh International Conference on Pattern Recognition and Image Analysis 2004, St. Petersburg (*Invertible Orientation Bundle Functions based on Generalized Wavelet Theory*).
- International Workshop at Eurandom 2006 (invited presentation: *Contour Enhancement and Completion via Left-Invariant Second Order Stochastic Evolution Equations on the 2D-Euclidean Motion Group*).
- International Workshop at Eurandom 2007 (invited presentation: *Contour Enhancement and Completion via Left Invariant Evolution Equations on $SE(2)$* , cf. video-lecture http://videolectures.net/acs07_duits_cec/).
- International Conference Scale Space and variational methods in computer vision, 7-2009, Isschia, Italy, (3 poster presentations and 1 oral presentation entitled *Linear Image Reconstruction by Sobolev Norms on the Bounded Domain*).
- International Workshop at Eurandom 2008 (invited presentation: *Adaptive Left Invariant Diffusions on the Heisenberg Group*).
- Sixth International Congress on Industrial and Applied Mathematics 2007, Zürich, Switzerland (invited presentation: *Scale Spaces on $SE(d)$*).
- International Conference Scale Space and variational methods in computer vision, 7-2009, Voss, Norway, (2 poster presentations and 1 oral presentation entitled *Diffusions on the 3D Euclidean Motion Group for Processing HARDI Data.*)
- Conference on Time-Frequency Analysis, organized by Hans G. Feichtinger, 6-2009, Strobl, Austria. (invited oral presentation: *Adaptive Left Invariant Diffusions on the Heisenberg Group*)
- Conference *Nonlinear Control and Singularities*, 10-2010, Porquerolles, France, (invited oral presentation).
- *International Conference Scale Space and variational methods in computer vision*, 6-2011, Ein-Gedi, Israel, and (2 selected oral presentations, 1 keynote oral presentation).
- Conference on *Statistics and neuro-imaging* WIAS Berlin, November 2012 (1 invited oral presentation)
- Dagstuhl Seminar 11501 on Visualization and Processing of Tensors and Higher Order Descriptors for Multi-Valued Data, Schloss Dagstuhl, December 2011 (1 invited oral presentation)

Dr.ir. R.Duits has presented his research at many national and international conferences and seminars. Below is a short list of invited presentations given the last five years (besides the ones mentioned above):

- Colloquium at Utrecht University, December 2005 (*Perceptual Organization: A Mathematical Approach Based on Scale and Orientation*, on invitation by Prof. Hans Duistermaat).
- Colloquium at University of Saarbrücken, Saarland University, Germany, June 2007 (*Coherence Enhancing Diffusion via Invertible Orientation Scores*). On invitation by dr. B. Burgeth and Prof J. Weickert.
- Colloquium at University of Linköping, Sweden, April 2008 (*The Framework of Invertible Orientation Scores*).
- Colloquium at Institute of Imaging and Computer Vision, RWTH Aachen, June 2008 (*Parabolic Evolution Equations on $SE(2)$*).
- Colloquium at Euler Institute for Discrete Mathematics and its Applications, Eindhoven University of Technology, January, 2009, (*Adaptive Left Invariant Evolutions on Lie Groups and their Applications to Image Analysis*).
- Colloquium at Helmholtz Institute Munich, April 2011, *PDE's on Lie Groups and their application to image analysis*. On invitation by dr. L. Demaret and Prof.G.Winkler
- Invited presentation at conference *Nonlinear Control and Singularities*, 10-2010, Porquerolles, France. On invitation by Ugo Boscain, Francesco Rossi and J.P. Gauthier (*Left Invariant Evolutions on Lie Groups and their applications to image analysis*).
- Keynote speaker presentation at Scale Space and Variational Methods conference, Ein-Gedi Israel, May 2011, (*Scale Spaces on Lie groups and their Applications to Image Processing*). On invitation by prof. F. Brückstein and prof. R. Kimmel.
- Analysis Seminar RWTH Aachen, July 2011, (*PDE's on the Euclidean Motion Group and Heisenberg Group and their Applications to Neuro- and Cardiac imaging*).
- Colloquium presentation at École Polytechnique Paris, (Centre de Mathématiques Appliquées, CMAP), June 2011, (*Hypo-elliptic Evolutions and Control Problems on the 2D and 3D Euclidean Motion Group and their Applications in Medical Imaging*). On invitation by Ugo Boscain and Antonin Chambolle (CMAP).
- Invited presentation at Weierstrass Institute Berlin, November 2010, (*Enhancement of Crossing Fiber-structures in DW-MRI*), on invitation by dr. K. Tabelow and Prof. J. Polzehl.
- Invited presentation at Dagstuhl Seminar 11501 on Visualization and Processing of Tensors and Higher Order Descriptors for Multi-Valued Data, Schloss Dagstuhl, December 2011, (*Sharpening Fibers in Diffusion Weighted MRI via Erosion*).
- Invited presentation at mathematics colloquium Henri Poincaré Institute and École Polytechnique Paris, April 2012, (*A Lie group Approach to Contextual Image Analysis*) on invitation by dr. A. Sarti.
- Invited and first presentation at “Workshop on neurogeometry in Telc” (as part of the AMeGA project *Algebraic methods in geometry with potential towards applications*, organized by Jan Slovák, Dmitri Alekseevsky and Yuri Sachkov) at Brno (Telc) Czech Republic, video-lecture: http://www.polymedia.cz/recordings/Neurogeometry_01/, November 2012, (*Sub-Riemannian Geometric Control and PDE's on Lie Groups with Applications to Medical Imaging*) on invitation by Yuri Sachkov and Jan Slovák.
- ERC-grant presentation *Lie Group Analysis for Medical Image Processing*, May 2013, at Brussels (successfully rewarded ERC-proposal Lie Analysis, no. 335555).

- Invited presentation *Cusplless Sub-Riemannian Geodesics in $SE(d)$ for Lie Group Analysis in Medical Image Processing* on August 2013 “Differential Geometry and Applications”, Brno (Czech Republic) invited by main organizer Jan Slovak.
- Collaborative visit, december 2013 to WIAS Berlin, on invitation by J.Polzehl and K.Tabelow.
- Presentations at applied imaging conferences *Optic Nerve Head Detection via Group Correlations in Multi-Orientation Transforms* at ICIAR 2014 (oral, yielding invited submission to IJCV) and *Crossing-Preserving Multi-Scale Vesselness* at MICCAI 2014 (poster).
- Invited presentation *An Overview of Left-Invariant Processing via Orientation Scores*, 10 October 2014 at the group of Stephane Mallat, Ecole Normale Superieure, Paris, on the occasion of being one of the two main ‘rapporteurs’ in the evaluation committee of Laurent Siffre’s PhD-thesis (supervised by Stephane Mallat) entitled “Rigid-motion Scattering For Image Classification” on invitation by Stephane Mallat.
- Invited presentation *Lie Group Analysis for Medical Image Processing*, 23-10-2014, and poster presentation *Solutions to an Association Field Model on the Retinal Sphere: sub-Riemannian Geodesics in $SO(3)$ with Cusplless Spherical Projections*. on conference “Differential Geometrical Models in Vision”, <http://gmvision.lsis.org/>, at Institute Henri Poincaré Paris, on invitation by main organizers Giovanna Citti and Ugo Boscaïn. For slides presentation, see http://bmia.bmt.tue.nl/people/RDuits/RDuits_atIHP_oct2014_WITH_EXTRA_SLIDES.pptx
- Invited presentation, *Best Exponetial Curve Fits, Locally Adaptive Frames, sub-Riemannian Geodesics and Applications to Medical Imaging*, 15-11-2014 , at workshop “Riemannian and sub-Riemannian geometry on Lie groups and homogeneous spaces”, Institute Henri Poincaré Paris, on invitation by main organizers Yuri Sachkov and Dimitri Alekseevsky. For slides presentation, see <http://bmia.bmt.tue.nl/people/RDuits/Remco.pptx>
- Selected Oral Presentation *Invertible Orientation Scores of 3D Images*, at SSVM 2015, Cap Ferret (Bordeaux), June 2015, see <http://bmia.bmt.tue.nl/people/RDuits/SSVM2015final.pptx>
- Invited presentation, *The Drunk Mans Walk, Drive, and Flight, and Applications to Medical Image Analysis*. , dutch royal association for mathematics (Koninklijk Wiskundig Genootschap), Utrecht University, Academie Gebouw. January 2016.
www.wiskgenoot.nl/sites/default/files/afbeeldingen/wintersymposium/2016/brochure-wintersymposium2016.pdf
For slides presentation see <http://bmia.bmt.tue.nl/people/RDuits/KWGRemcoDuitspresentedslides.pptx>
- Invited presentation, *Uncertainty Quantification of Uncertainty Quantification of Traffic in $SE(d)$ with Image Analysis Applications*. , mathematics colloquium at RWTH Aachen, April 2016. For slides see <http://bmia.bmt.tue.nl/people/RDuits/RWTHRDFinal2.pptx>
- Invited presentation, *Locally Adaptive Frames in the Roto-Translation Group $SE(d)$* at SIAM conf., Albuquerque, New Mexico, USA, May 2016.
- Presentation, *Invertible Orientation Scores of 3D Images*, International Workshop on Geometry, PDEs and Lie Groups in Image Analysis, <http://bmia.bmt.tue.nl/people/RDuits/workshop/index.html>, TU/e, August 2017.
- Invited week of presentations on lecture *Orientation Score Theory and its Solutions to Cortical ODE, PDE and Wavelet Models*, <http://bmia.bmt.tue.nl/people/RDuits/Cortona/SCHEDULEcourseRemcoDuits.pdf> in International Summer School Cortona (Italy) <http://bmia.bmt.tue.nl/people/RDuits/cort.pdf>, July 10–14, 2017.

- Invited presentation *Mathematics to Improve Epilepsy Treatment*, at Epilepsy Institute Kempenhaeghe, <http://bmia.bmt.tue.nl/people/RDuits/KHP0.pdf>, 26 October 2016, in honor of Pauly Ossenblok. Slides presentation http://bmia.bmt.tue.nl/people/RDuits/RemcoDuits_SymposiumPaulyFinalVersion.pptx
- Invited presentation *Lie Group Analysis for Medical Image Processing*, Eindhoven Multi-scale Institute, EMI TU/e, 31 October 2017.
Slides presentation: <http://bmia.bmt.tue.nl/people/RDuits/emi.pdf>
- Invited presentation *Vessel Tracking on the Projective Line Bundle* at Mathematical Conference ‘Geometric Science of Information’ GSI, Mines ParisTech Paris, <https://www.see.asso.fr/gsi2017>, 8 nov. 2017. For slides see <http://bmia.bmt.tue.nl/people/RDuits/GSI2017final.pptx>
- Invited oral presentation *Brain Connectivity Measures via Direct Sub-Finslerian Front Propagation in $\mathbb{R}^3 \times S^2$* , at CDMRI workshop MICCAI, Granada, 2018.
- Invited presentation *Optimal Paths for Variants of the 2D and 3D Reeds-Shepp Car with Applications in Image Analysis* at MIA 2018 conference, Humboldt University Berlin, 15 January 2018, see <https://www.wias-berlin.de/workshops/MIA2018/>.
For slides see <http://bmia.bmt.tue.nl/people/RDuits/BerlinFinal3.pptx>.
- Invited presentation *Optimal Paths for Variants of the 2D and 3D Reeds-Shepp Car with Applications in Image Analysis* at SIAM-Conference of Imaging Science, UNIBI, Bologna, 8 June 2018.
For slides see <http://bmia.bmt.tue.nl/people/RDuits/BolognaFinal5.pptx>.