

## Publications dr.ir.R. Duits until June-2017

Type of Publication	#
peer-reviewed international journals	<b>36</b>
peer-reviewed conferences proceedings	<b>46</b>
book chapters	<b>4</b>
books	<b>2</b>
peer-reviewed abstracts with code release	<b>2</b>

Total number of publications 90. Google scholar (h-ind 20, i-10 ind 39, cit. 1430).

Publications contain multiple novelties both on the theoretical as on the application side.

Key publications are available on my homepage:

<http://bmia.bmt.tue.nl/people/RDuits/>.

For additional recent submissions/preprints over last months see final section.

### Peer-reviewed Journal Publications:

[RD 1] R. Duits, L. M. J. Florack, J. de Graaf, and B. M. ter Haar Romeny, “On the axioms of scale space theory,” *Journal of Mathematical Imaging and Vision*, vol. 20, pp. 267–298, 2004.

[RD 2] R. Duits and M. van Almsick, “The explicit solutions of linear left-invariant second order stochastic evolution equations on the 2d-Euclidean motion group,” *Quarterly of Applied Mathematics, American Mathematical Society*, vol. 66, pp. 27–67, April 2008.

[RD 3] R. Duits and E. M. Franken, “Left invariant parabolic evolution equations on  $SE(2)$  and contour enhancement via invertible orientation scores, part I: Linear left-invariant diffusion equations on  $SE(2)$ ,” *Quarterly of Applied mathematics, AMS*, vol. 68, pp. 255–292, June 2010.

[RD 4] R. Duits and E. Franken, “Left invariant parabolic evolution equations on  $SE(2)$  and contour enhancement via invertible orientation scores, part II: Nonlinear left-invariant diffusion equations on invertible orientation scores,” *Quarterly of Applied mathematics, AMS*, vol. 68, pp. 293–331, June 2010.

[RD 5] R. Duits, M. Felsberg, G. Granlund, and B. M. ter Haar Romeny, “Image analysis and reconstruction using a wavelet transform constructed from a reducible representation of the Euclidean motion group,” *International Journal of Computer Vision*, vol. 79, no. 1, pp. 79–102, 2007.

[RD 6] B. J. Janssen\* & F. M. W. Kanters\* & R. Duits\* (joint first authors), L. M. J. Florack, and B. M. ter Haar Romeny, “A linear image reconstruction framework based on Sobolev type inner products,” *International Journal of Computer Vision*, vol. 70, no. 3, pp. 231–240, 2006.

[RD 7] R. Duits, M. Duits, M. van Almsick, and B. M. ter Haar Romeny, “Invertible orientation scores as an application of generalized wavelet theory,” *Image Processing, Analysis, Recognition and Understanding*, vol. 17, no. 1, pp. 42–75, 2007.

[RD 8] R. Duits and E. M. Franken, “Left-invariant diffusions on the space of positions and orientations and their application to crossing-preserving smoothing of HARDI images,” *International Journal of Computer Vision* vol. 92, pp. 231–264, March 2011.

[RD 9] R. Duits, B. Janssen, A. Becciu, and H. van Assen, “A variational approach to cardiac motion estimation based on covariant derivatives and multi-scale helmholtz decomposition,” *Quarterly of Applied Mathematics, American Mathematical Society* 71, p.1–36, 2013.

[RD 10] B. J. Janssen and R. Duits, “Linear image reconstruction by Sobolev norms on the bounded domain,” *International Journal of Computer Vision*, vol. 84, no. 2, pp. 205–219, 2009.

[RD 11] E. M. Franken and R. Duits, “Crossing preserving coherence-enhancing diffusion on invertible orientation scores,” *International Journal of Computer Vision (IJCV)*, vol. 85, no. 3, pp. 253–278, 2009.

[RD 12] M. Felsberg, R. Duits, and L. M. J. Florack, “The monogenic scale space on a bounded domain and its applications,” *International Journal of Computer Vision*, vol. 2–3, no. 64, pp. 187–201, 2005.

[RD 13] R. Duits, H. Führ, B.J. Janssen, M. Bruurmijn, L.M.J. Florack and H.A.C. van Assen, “Evolution Equations on Gabor Transforms and their Applications”, *Applied and Computational Harmonic Analysis*, vol.35 (3), p.483–526, 2013.

<http://bmia.bmt.tue.nl/people/RDuits/articleDFJBFvA.pdf>

- [RD 14] F. M. W. Kanters, L. M. J. Florack, R. Duits, B. Platel, and B. M. ter Haar Romeny, “Alpha scale spaces in practice,” *Pattern Recognition and Image Analysis*, vol. 17, no. 1, pp. 42–75, 2007.
- [RD 15] R. Duits, “Schaal partituren,” *NAW*, vol. 5/9, no. 3, pp. 224–232, 2008.
- [RD 16] E.J. Creusen\* & R. Duits\* (joint first authors), A. Vilanova and L.M.J. Florack, “Numerical Schemes for Linear and Non-linear Enhancement of DW-MRI”, *NM-TMA* vol. 6, no.1, p.138–168, 2013 *Numerical Methods–Theory and Applications*, .  
<http://bmia.bmt.tue.nl/people/RDuits/CreusenDuits-NM-TMA2011.pdf>
- [RD 17] R. Duits, T.C.J.Dela Haije, E.J. Creusen and A. Ghosh, “Morphological and Linear Scale Spaces for Fiber Enhancement in DW-MRI”, *Journal of Mathematical Imaging and Vision*, vol.46, no.3, pp. 326-368, 2013.  
<http://bmia.bmt.tue.nl/people/RDuits/JMIVDuits2011final.pdf>,
- [RD 18] U. Boscain, R. Duits, F. Rossi and Y. Sachkov, “Curve Cuspless Reconstruction via sub-Riemannian Geometry” *ESAIM-COCV Control Optimization and Calculus of Variations.*, vol. 20, pp.748–770, 2014. <http://bmia.bmt.tue.nl/people/RDuits/1203.3089v2.pdf>.
- [RD 19] E. Bekkers, R. Duits, T. Berendschot, B.M. ter Haar Romeny, “A Multi-Orientation Analysis Approach to Retinal Vessel Tracking.” <http://bmia.bmt.tue.nl/people/RDuits/bekkersduitsARCHIV.pdf> *Journal of Mathematical Imaging and Vision* , vol. 49, no. 3 pp. 583–610, 2014.
- [RD 20] R. Duits, U. Boscain, F. Rossi and Y. Sachkov, “Association Fields via Cuspless Sub-Riemannian Geodesics in  $SE(2)$ .” *Journal of Mathematical Imaging and Vision* , vol. 49, no. 2 pp. 384–417, 2014.  
<http://bmia.bmt.tue.nl/people/RDuits/cusp.pdf>.
- [RD 21] C.M.W. Tax, R. Duits, A. Vilanova, B.M. ter Haar Romeny, P.Hofman, L.Wagner, A.Leemans and P. Ossenblok, “Evaluating Contextual Processing in Diffusion MRI: Application to Optic Radiation Reconstruction for Epilepsy Surgery” *PLOSone Open Access* Vol 9, no. 7, p.1–19, 2014.  
<http://bmia.bmt.tue.nl/people/RDuits/TaxDuitsetal.pdf>.
- [RD 22] U. Sharma and R. Duits. *Left-invariant evolutions of wavelet transforms on the Similitude Group*. *ACHA Applied and Computational Harmonic Analysis*, Vol. 39, p.110–137, 2015.  
<http://bmia.bmt.tue.nl/people/RDuits/rana13-17.pdf>.
- [RD 23] J. Zhang\* & R. Duits\* (\*joint main authors), G.R. Sanguinetti, B.M.ter Haar Romeny. “On Numerical Approaches for Linear Left-invariant Diffusions on  $SE(2)$ , their Comparison to Exact Solutions, and their Applications in Retinal Imaging.” vol. 9, p.1-50, 2016.  
[www.bmia.bmt.tue.nl/people/RDuits/ZhangDuits.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/ZhangDuits.pdf)
- [RD 24] J.Portegies, R.Fick, G.R.Sanguinetti, S.P.L.Meesters, G.Girard and R.Duits. *Improving Fiber Alignment in HARDI by Combining Contextual PDE flow with Constrained Spherical Deconvolution*. Accepted for open access publication in *PlosOne* 2015.
- [RD 25] E.J. Bekkers\* and R.Duits\* and A.Mashtakov\* and G.R.Sanguinetti\* (\*joint main authors). “A PDE Approach to Data-Driven Sub-Riemannian Geodesics” *SIAM Journal on Imaging Sciences (SIIMS)*, vol 8, (4), p.2740–2770, 2015. <http://bmia.bmt.tue.nl/people/RDuits/siims.pdf>
- [RD 26] R. Duits\* & M.H.J. Janssen\* (\*joint main authors), J. Hannink, G. Sanguinetti. *Locally Adaptive Frames in the Roto-translation Group and their Applications in Medical Imaging*, *JMIV* 56(3), p.367–402, 2016. <http://bmia.bmt.tue.nl/people/RDuits/1502.08002v3.pdf>
- [RD 79] B.M. ter Haar Romeny, E.J. Bekkers, J. Zhang, F. Fuang, R. Duits, B.Dashtbozorg et al. *Brain Inspired Algorithms for Retinal Image Processing*, *Machine Vision and Applications*, p.1–16, 2016.
- [RD 80] J. Zhang, B. Dashtbozorg, E.J. Bekkers, J. Pluim, R. Duits, ter Haar Romeny, B.M. *Robust Retinal Vessel Segmentation via Locally Adaptive Derivative Frames in Orientation Scores* *IEEE Transactions on Medical Imaging TMI* 35(12), p.2631-2644, 2016 .  
[pdf: www.bmia.bmt.tue.nl/people/RDuits/segmentation.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/segmentation.pdf)
- [RD 89] A. Mashtakov, R. Duits. *A cortical Based Model for Contour Perception on the Retinal Sphere* *Program systems: Theory and applications*, 2016, 7:4(31), p.231–247.  
[http://psta.pstir.ru/read/psta2016\\_4\\_231-247.pdf](http://psta.pstir.ru/read/psta2016_4_231-247.pdf)
- [RD 90] A. Mashtakov, R. Duits, Yu. Sachkov, E. Bekkers, I. Beschastnyi. *Sub-Riemannian Geodesics in  $SO(3)$  with Application to Vessel Tracking in Spherical Images of Retina* *Doklady Mathematics*. Accepted. To appear in 2017. [https://www.dropbox.com/s/x45v8ik3a9wgk5y/SO3\\_dan.pdf?dl=0](https://www.dropbox.com/s/x45v8ik3a9wgk5y/SO3_dan.pdf?dl=0)

[RD 81] R. Duits, A. Ghosh, T.C.J. Dela Haije and A. Mashtakov. *On sub-Riemannian Geodesics within  $SE(3)/(\{0\} \times SO(2))$  whose spatial projections do not have cusps.* Journal of Dynamical Control Systems (JDCS), 22(4), p.771–805, 2016.

DOI: 10.1007/s10883-016-9329-4, <http://bmia.bmt.tue.nl/people/RDuits/JDCS.pdf>

[RD 83] E.J. Bekkers, M. Loog, M., B.M. ter Haar Romeny, B. and R. Duits, *Template Matching on the Roto-Translation Group*, Accepted for publication in IEEE-PAMI, Pattern Recognition and Machine Intelligence. To appear in 2017.

For article and code see <https://erikbekkers.bitbucket.io/TMSE2.html>

[RD 82] S. Meesters, P. Ossenblok, L. Wagner, P. Hofman, O. Schrijns, P. Boon, L.M.J. Florack, A. Vilanova, and R. Duits. *Stability metrics for optic radiation tractography: towards damage prediction after resective surgery.*

Accepted. To appear in Journal of Neuroscience Methods.

For preprint see [www.bmia.bmt.tue.nl/people/RDuits/stephan2.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/stephan2.pdf)

[RD 85] Abbasi-Surehjani, S., Zhang, J., Duits, R. and ter Haar Romeny, B.M. *Retrieving challenging vessel connections in retinal images by line co-occurrence statistics*

Accepted. To appear in Biological Cybernetics, 2017. [www.bmia.bmt.tue.nl/people/RDuits/samaneh.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/samaneh.pdf)

[RD 84] Mashtakov, A., Duits, R., Sachkov, Y.L., Bekkers, E.J. and Beschastnyi, I. *Tracking of Lines in Spherical Images via Sub-Riemannian Geodesics in  $SO(3)$* , JMIV, 58(2), pp.239–264, 2017.

[RD 87] Portegies, J.M. and Duits, R. *New Exact and Numerical Solutions of the (Convection-)Diffusion Kernels on  $SE(3)$*  Accepted for publication in DGA, *Differential Geometry and Applications*. To appear in 2017.

For preprint see <http://bmia.bmt.tue.nl/people/RDuits/SE3JorgPortegiesDuits.pdf>.

For extended version see <https://arxiv.org/abs/1604.03843>

### Peer-reviewed proceedings/conference publications:

[RD 27] R. Duits, T. C. J. Dela Haije, A. Ghosh, E. J. Creusen, A. Vilanova, and B. ter Haar Romeny, “Enhancement of DW-MRI,” in *Scale Space and Variational Methods in Computer Vision (Lecture Notes in Computer Science)*, vol. 6667, pp. 1–13, September 2011.

[RD 28] R. Duits, B. Janssen, F. Kanters, and L. M. J. Florack, “Linear image reconstruction from a sparse set of  $\alpha$  scale space features by means of inner products of Sobolev type,” *Lecture Notes in Computer Science, Springer-Verlag*, vol. 3753, pp. 96–111, June 2005.

[RD 29] R. Duits, M. van Almsick, M. Duits, E. Franken, and L. M. J. Florack, “Image processing via shift-twist invariant operations on orientation bundle functions,” in *7th International Conference on Pattern Recognition and Image Analysis: New Information Technologies* (N. Z. e. a. Geppener, Gurevich, ed.), (St.Petersburg), pp. 193–196, October 2004.

[RD 30] R. Duits, M. Felsberg, and L. M. J. Florack, “ $\alpha$  scale spaces on a bounded domain,” *Proceedings Scale Space Conference, Isle of Skye, UK.*, pp. 494–510, June 2003.

[RD 31] R. Duits and B. Burgeth, “Scale spaces on Lie groups,” in *Scale Space and Variational methods* (M. Sgallari and Paragios, eds.), (Ischia, Italy), pp. 300–312, 2007.

[RD 32] R. Duits, L. Florack, B. ter Haar Romeny, and J. de Graaf, “Scale-space axioms critically revisited,” in *Signal and Image Processing* (N. Younan, ed.), (Kauai), pp. 304–309, August 2002. Proceedings of the Fourth IASTED International Conference.

[RD 33] R. Duits and E. M. Franken, “Line enhancement and completion via left-invariant scale spaces on  $SE(2)$ ,” in *Scale Space and Variational Methods in Computer Vision (Lecture Notes in Computer Science)*, vol. 5567, (Heidelberg), pp. 795–807, Springer-Verlag, 2009.

[RD 34] R. Duits, F. Kanters, L. M. J. Florack, and B. M. ter Haar Romeny, “A comparison between the deep structure of alpha scale spaces,” *Lecture Notes in Computer Science, Springer-Verlag*, vol. 3753, pp. 234–248, June 2005.

[RD 35] M. Felsberg, R. Duits, and L. Florack, “The monogenic scale space on a bounded domain and its applications,” *Proceedings Scale Space Conference, volume 2695 of Lecture Notes of Computer Science, Springer, Isle of Skye, UK.*, pp. 209–224, June 2003.

[RD 36] L. M. J. Florack and R. Duits, “Regularity classes for locally orderless images,” *Proceedings Scale Space Conference, Isle of Skye, UK.*, pp. 255–265, June 2003.

[RD 37] L. M. J. Florack, R. Duits, and J. Bierkens, “Tikhonov regularization versus scale space: a new result,” in *Proceedings IEEE Conference on Image Processing ICIP 2004*, vol. 1, (Piscataway, NJ: IEEE), pp. 271–274.

[RD 38] L. M. J. Florack, R. Duits, B. J. Janssen, and F. M. W. Kanters, “Towards a new paradigm for motion extraction,” in *Lecture Notes in Computer Science, Vol. 4141, Proc. 3rd Int. Conf. ICIAR 2006*, (Portugal), pp. 753–754, Springer, 2006.

[RD 39] K. Pedersen, R. Duits, and M. Nielsen, “On  $\alpha$ -kernels, lévy processes, and natural image statistics,” in *Proc. on the 5th International Conference on Scale Space and PDE methods* (W. Kimmel, Sochen, ed.), (Hofgeismar, Germany), pp. 486–480, Springer, 2005.

[RD 40] B. Janssen, F. Kanters, R. Duits, L. M. J. Florack, and B. M. ter Haar Romeny, “A linear image reconstruction framework based on Sobolev type inner products,” in *Proc. on the 5th International Conference on Scale Space and PDE methods* (W. Kimmel, Sochen, ed.), (Hofgeismar, Germany), pp. 85–95, Springer, 2005.

[RD 41] E. M. Franken, R. Duits, and B. M. ter Haar Romeny, “Non-linear diffusion on the Euclidean motion group,” in *Proc. of the first International Conference on Scale Space and Variational Methods in Computer Vision, Lecture Notes in Computer Science, Vol. 4485, Springer* (M. Sgallari and Paragios, eds.), pp. 461–472, June 2007.

[RD 42] E. M. Franken, R. Duits, and B. M. ter Haar Romeny, “Curvature estimation for enhancement of crossing curves,” in *Digital Proceedings of the 8th IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA), held in conjunction with the IEEE International Conference on Computer Vision (Rio de Janeiro, Brazil)* (C.-F. W. W. Niessen and M. Nielsen, eds.), pp. 1–8, Omnipress, October 2007. Awarded the *MMBIA 2007 best paper award*.

[RD 43] B. J. Janssen, R. Duits, and B. M. ter Haar Romeny, “Linear image reconstruction by Sobolev norms on the bounded domain,” in *Proc. of the first International Conference on Scale Space and Variational Methods in Computer Vision, Lecture Notes in Computer Science, Vol. 4485, Springer* (M. Sgallari and Paragios, eds.), pp. 461–472, June 2007.

[RD 44] M. A. van Almsick, R. Duits, E. Franken, and B. ter Haar Romeny, “From stochastic completion fields to tensor voting,” in *Proceedings DSSCC-workshop on Deep Structure Singularities and Computer Vision, Lecture Notes in Computer Science Vol. 3753*, (Maastricht the Netherlands), pp. 124–134, Springer-Verlag, June 9-10 2005.

[RD 45] B. Janssen, R. Duits, and L. M. J. Florack, “Coarse-to-fine image reconstruction based on weighted differential features and background gauge fields,” in *Scale Space and Variational Methods in Computer Vision (Lecture Notes in Computer Science)*, vol. 5567, (Heidelberg), pp. 377–388, Springer-Verlag, 2009.

[RD 46] E. M. Franken, R. Duits, and B. M. ter Haar Romeny, “Diffusion on the 3d Euclidean motion group for enhancement of HARDI data,” in *Scale Space and Variational Methods in Computer Vision (Lecture Notes in Computer Science)*, vol. 5567, (Heidelberg), pp. 820–831, Springer-Verlag, 2009.

[RD 47] E. J. Creusen, R. Duits, and T. C. J. Dela Haije, “Numerical schemes for linear and non-linear enhancement of DW-MRI,” in *Scale Space and Variational Methods in Computer Vision (Lecture Notes in Computer Science)*, vol. 6667, (Heidelberg), pp. 14–25, Springer-Verlag, September 2011.

[RD 48] A. Becciu, R. Duits, B. Janssen, L. Florack, and H. van Assen, “Cardiac motion estimation using covariant derivatives and Helmholtz decomposition,” in *Lecture Notes Computer Science vol. 7085 (MICCAI workshop)*, pp.263–273, Springer-Verlag, 2012.

[RD 49] P. Rodrigues, R. Duits, A. Vilanova, and B. ter Haar Romeny, “Accelerated diffusion operators for enhancing DW-MRI,” in *Eurographics Workshop on Visual Computing for Biology and Medicine*, ISBN 978-3-905674-28-6, (Leipzig Germany), pp. 49–56, Springer, 2010.

[RD 50] E. Brunenberg, R. Duits, ter Haar Romeny, and B. Platel, “A Sobolev norm based distance measure for HARDI clustering – a feasibility study on phantom and real data,” *Lecture Notes in Computer Science*, vol. 6361, pp. 175–182, 2010.

[RD 51] F. Kanters, L. M. J. Florack, R. Duits, and B. Platel, “ $\alpha$ -scale space kernels in practice,” in *7th International Conference on Pattern Recognition and Image Analysis: New Information Technologies* (N. Z. e. a. Geppener, Gurevich, ed.), (St.Petersburg), pp. 260–263, October 2004.

[RD 52] F. Kanters, M. Lillholm, R. Duits, B. J. Janssen, B. Platel, and L. M. J. Florack, “A linear image reconstruction framework based on Sobolev type inner products,” in *Proc. on the 5th International Conference on Scale Space and PDE methods* (W. Kimmel, Sochen, ed.), (Hofgeismar, Germany), pp. 431–442, Springer, 2005.

[RD 53] B. J. Janssen, L. M. J. Florack, R. Duits, and B. M. ter Haar Romeny, “Optic flow from multi-scale dynamic anchor point attributes,” in *Lecture Notes in Computer Science, Vol. 4141, Proc.3rd Int. Conf. ICIAR 2006*, (Portugal), pp. 767–779, Springer, 2006.

[RD 54] P. Ossenblok, C. Tax, A. Colon, C. Jacobs, R. Duits, L. Wagner, B. ter Haar Romeny, and A. Vilanova, “Reconstruction of the optic tract prior to an atlr using fmri-seeded dti tractography.” Abstract and Poster 29th Int. Epilepsy Congress Rome. Published online <http://www.epilepsyrome2011.org/>, September 2011.

[RD 55] V. Prckovska, P. Rodrigues, R. Duits, A. Vilanova, and B. ter Haar Romeny, “Extrapolating fiber crossings from DTI data. Can we infer similar fiber crossings as in HARDI ?,” in *CDMRI’10 MICCAI 2010 workshop on computational diffusion MRI*, vol. 1, (Beijing China), pp. 26–37, Springer, august 2010.

[RD 56] C. M. W. Tax, R. Duits, B.M. ter Haar Romeny, A. Vilanova and P. Ossenblok, *Tractography of the Optic Radiation for Vision Sparing Epilepsy Surgery* Proceedings IEEE (ICIA) Int. Conf. on Information and Automation, Shenyang, China, pp.441–445, June 2012.

[RD 57] U. Boscaïn, R. Duits, F. Rossi and Y. Sachkov *Optimal control for reconstruction of curves without cusps*, In Proc. IEEE Conference on Decision and Control (CDC), Maui, USA, December 2012, p.7679–7684. <http://bmia.bmt.tue.nl/people/RDuits/CDC2012.pdf>

[RD 58] L. C. M. Bruurmijn, H. B. Kause, O.G. Filatova, R. Duits, A. Fuster, L.M.J. Florack, H.C. van Assen, *Myocardial Deformation from Local Frequency Estimation in Tagging MRI* in *Functional Imaging and Modeling of the Heart*, Editors Ourselin, Sébastien and Rueckert et al., LNCS (7945) p.284–291, 2013.

[RD 59] C.M.W. Tax, T.C.J. Dela Haije, A. Fuster, R. Duits, M. A. Viergever, L.M.J.Florack and A. Leemans. *Towards Quantification of the Brain’s Sheet Structure: Evaluation of the Discrete Lie Bracket*. ISMRM 2014. pdf: [www.bmia.bmt.tue.nl/people/RDuits/0975.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/0975.pdf)

[RD 60] H.B. Kause, O.G. Filatova, O.G. and R.Duits, L.C.M. Bruurmijn, A. Fuster, J. Westenberg, L.M.J.Florack, and H.C. van Assen, *Direct Myocardial Strain Assessment from Frequency Estimation in Tagging MRI* in “Statistical Atlases and Computational Models of the Heart. Imaging and Modelling Challenges”, ed. Camara, O. and Masi, T. et al. LNCS 8333, p.212–219, 2014.

[RD 61] E.J. Bekkers, R. Duits, B.M.ter Haar Romeny, *Optic Nerve Head Detection via Group Correlations in Multi-Orientation Transforms*, ICIAR 2014, Part II, LNCS 8815, pp. 293302, 2014.

[RD 62] J. Hannink, R. Duits, and E. Bekkers, *Crossing-Preserving Multi-Scale Vesselness* Medical Image Computing and Computer-Assisted Intervention (MICCAI) proc. 2014, LNCS 8674, (eds. Golland, Polina and Hata, et al.), pp.603–610, 2014. <http://bmia.bmt.tue.nl/people/RDuits/paper848.pdf>

[RD 63] H. Kause, O. Filatova, R. Duits, M. Bruurmijn, A. Fuster, J. Westenberg, L.M.J. Florack, H.C.van Assen, *Myocardial strain assessment in tagging MRI from local frequency estimation* accepted for oral presentation at BME2015 conf. Egmond aan Zee, 2015.

[RD 64] E.J. Bekkers, R. Duits and M. Loog. *Training of Templates for Object Recognition in Invertible Orientation Scores: Application to Optic Nerve Head Detection in Retinal Images*, EMMCVPR 2015 LNCS 8932, p.464477, 2015. <http://bmia.bmt.tue.nl/people/RDuits/ONH.pdf>

[RD 65] E.J. Bekkers\*, R. Duits\*, A. Mashtakov\*, G.R. Sanguinetti\* (\*joint main authors). *Sub-Riemannian geodesics with non-uniform cost*, SSVM 2015 (eds. Aujol, Nikolova, Papadakis), LNCS 9087, p.612-625, 2015. <http://bmia.bmt.tue.nl/people/RDuits/RD70.pdf>

[RD 66] J. Portegies, G.R. Sanguinetti, S.P.L. Meesters, and R. Duits. *New Approximation of a Scale Space Kernel on  $SE(3)$  and Applications in Neuroimaging*, Proc. SSVM 2015 (eds. Aujol, Nikolova, Papadakis), LNCS 9087, p.40-52, 2015. <http://bmia.bmt.tue.nl/people/RDuits/RD71.pdf>

[RD 67] M.H.J.Janssen, R.Duits, M.Breeuwer. *Invertible Orientation Scores of 3D images*, SSVM 2015 (eds. Aujol, Nikolova, Papadakis), LNCS 9087, p.563-575, 2015.

<http://www.bmia.bmt.tue.nl/People/RDuits/RD72.pdf>

[RD 68] V.Golkov, J.Portegies, A.Golkov, R.Duits, and D.Cremers. *Holistic Image Reconstruction for Diffusion MRI*.

Accepted for Publication in LNCS proc. MICCAI workshop on computational diffusion MRI, June 2015.  
[www.bmia.bmt.tue.nl/people/RDuits/Holistic.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/Holistic.pdf)

[RD 69] E.J. Bekkers, J. Zhang, R. Duits and B.M. ter Haar Romeny, *Curvature based biomarkers for diabetic rethinopathy via exponential curve fits in  $SE(2)$* .

Accepted for publication in MICCAI workshop of ophthalmology (OMIA), to appear in LNCS.  
[www.bmia.bmt.tue.nl/people/RDuits/OMIABZDH.pdf](http://www.bmia.bmt.tue.nl/people/RDuits/OMIABZDH.pdf)

[RD 70] G.R. Sanguinetti, E.J. Bekkers, R. Duits, M.H.J. Janssen, A. Mashtakov and J.M. Mirebeau. *Sub-Riemannian Fast Marching in  $SE(2)$* . Accepted for publication in LNCS proc. CIARP 2015.  
<http://www.win.tue.nl/gsanguin/FMSE2.pdf>

[RD 86] Janssen, M.H.J., Dela H, Haije, T.C.J., Bekkers, E.J. and Duits, R. *The Hessian of Axially Symmetric Functions on  $SE(3)$  and Application in 3D Image Analysis* Proc. SSVM (eds. F.Lauze et al.), p.643–655, LNCS 10302, 2017.

[RD 91] E.J.Bekkers and R.Duits and A.Mashtakov and Y.Sachkov. *Vessel Tracking via Sub-Riemannian Geodesics on  $\mathbb{R}^2 \times P^1$*  Accepted for publication and presentation at GSI 2017.  
3rd conference on Geometric Science of Information, Paris.  
See <http://bmia.bmt.tue.nl/people/RDuits/GSI2017.pdf>

## Books and book chapters:

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