[J1] E. Rodola, L. Cosmo, M. M. Bronstein, A. Torsello and D. Cremers,  
**Partial Functional Correspondence,**  

[J2] L. Cosmo, E. Rodola, A. Albarelli, F. Memoli and D. Cremers,  
**Consistent Partial Matching of Shape Collections via Sparse Modeling,**  

[J3] D. Boscaini, J. Masci, E. Rodola, M. M. Bronstein and D. Cremers,  
**Anisotropic Diffusion Descriptors,**  

[J4] V. Golkov, A. Dosovitskiy, J. I. Sperl, M. I. Menzel, M. Czisch, P. Sämann, T. Brox and D. Cremers,  
**q-Space Deep Learning: Twelve-Fold Shorter and Model-Free Diffusion MRI Scans,**  

[J5] O. Litany, E. Rodola, A. M. Bronstein, M. M. Bronstein and D. Cremers,  
**Non-Rigid Puzzles,**  

[C1] N. Mayer, E. Ilg, P. Häsuer, P. Fischer, D. Cremers, A. Dosovitskiy and T. Brox,  
**A Large Dataset to Train Convolutional Networks for Disparity, Optical Flow, and Scene Flow Estimation,**  
*IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, 2016.

**Model-Free Novelty-Based Diffusion MRI,**  
*IEEE International Symposium on Biomedical Imaging (ISBI)*, Prague, Czech Republic, April 2016.

[C3] V. Usenko, J. Engel, J. Stueckler and D. Cremers,  
**Direct Visual-Inertial Odometry with Stereo Cameras,**  
*Int. Conf. on Robotics and Automation*, May 2016.

[C4] A. Narr, R. Triebel and D. Cremers,  
**Stream-based Active Learning for Efficient and Adaptive Classification of 3D Objects,**  
*Int. Conf. on Robotics and Automation*, May 2016.

**SHREC16: Partial Matching of Deformable Shapes,**  
*Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, May 2016.

[C6] L. Ma, C. Kerl, J. Stueckler and D. Cremers,  
**CPA-SLAM: Consistent Plane-Model Alignment for Direct RGB-D SLAM,**  
*Int. Conf. on Robotics and Automation*, May 2016.
[C7] J. Engel, V. Usenko and D. Cremers,
**A Photometrically Calibrated Benchmark For Monocular Visual Odometry**, 

[C8] J. Engel, V. Koltun and D. Cremers,
**Direct Sparse Odometry**, 

[J1] J. Diebold, C. Nieuwenhuis and D. Cremers,
**Midrange Geometric Interactions for Semantic Segmentation**, 

[J2] J. Diebold, S. Tari and D. Cremers,
**The Role of Diffusion in Figure Hunt Games**, 

[J3] S. Madhogaria, P. M. Baggenstoss, M. Schikora, W. Koch and D. Cremers,
**Car detection by fusion of HOG and causal MRF**, 

[J4] M. Klodt, K. Herzog, R. Tpfer and D. Cremers,
**Field phenotyping of grapevine growth using dense stereo reconstruction**, 

[J5] E. Rodola, A. Albarelli, D. Cremers and A. Torsello,
**A Simple and Effective Relevance-based Point Sampling for 3D Shapes**, 

[J6] R. Mecca, E. Rodola and D. Cremers,
**Realistic Photometric Stereo Using Partial Differential Irradiance Equation Ratios**, 

[J7] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,
**The Primal-Dual Hybrid Gradient Method for Semiconvex Splittings**, 

[C1] M. Moeller, J. Diebold, G. Gilboa and D. Cremers,
**Learning Nonlinear Spectral Filters for Color Image Reconstruction**, 
IEEE International Conference on Computer Vision (ICCV), 2015.

[C2] J. Diebold, N. Demmel, C. Hazrba, M. Miller and D. Cremers,
**Interactive Multi-label Segmentation of RGB-D Images**, 
Scale Space and Variational Methods in Computer Vision (SSVM), 2015.

[C3] C. Hazrba, J. Diebold and D. Cremers,
**Optimizing the Relevance-Redundancy Tradeoff for Efficient Semantic Segmentation**, 
Scale Space and Variational Methods in Computer Vision (SSVM), 2015, Oral Presentation.
[C4] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,  
Low Rank Priors for Color Image Regularization,  

[C5] M. Jaimez, M. Souiai, J. Gonzalez-Jimenez and D. Cremers,  
A Primal-Dual Framework for Real-Time Dense RGB-D Scene Flow,  
Proc. of the IEEE Int. Conf. on Robotics and Automation (ICRA), 2015.

[C6] J. Stühlmer and D. Cremers,  
A Fast Projection Method for Connectivity Constraints in Image Segmentati- 
on,  
X.-C. Tai, E. Bae, T. F. Chan and M. Lysaker(Eds.), Energy Minimization Methods in 
Computer Vision and Pattern Recognition (EMMCVPR), LNCS, 2015.

[C7] R. Mecca, E. Rodola and D. Cremers,  
Analysis of Surface Parametrizations for Modern Photometric Stereo Mode- 
ing,  
International Conference on Quality Control by Artificial Vision (QCAV), 2015.

[C8] F. Bergamasco, A. Albarelli, L. Cosmo, A. Torsello, E. Rodola and D. Cremers,  
Adopting an Unconstrained Ray Model in Light-field Cameras for 3D Shape 
Reconstruction,  
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015.

[C9] D. Mund, R. Triebel and D. Cremers,  
Active Online Confidence Boosting for Efficient Object Classification,  

[C10] V. Golkov, J. M. Portegies, A. Golkov, R. Duits and D. Cremers,  
Holistic Image Reconstruction for Diffusion MRI,  
MICCAI 2015 Workshop on Computational Diffusion MRI, Munich, Germany, Springer, 
October 2015, Oral Presentation and Book Chapter.

Cremers and T. Brox,  
FlowNet: Learning Optical Flow with Convolutional Networks,  
IEEE International Conference on Computer Vision (ICCV), December 2015.

V. Evers, M. Fiore, H. Hung, O. A. Islas Ramírez, M. Joosse, H. Kambhaita, T. Kucner, 
Rafi, M. van Rooij and L. Zhang,  
SPENCER: A Socially Aware Service Robot for Passenger Guidance and Help 
in Busy Airports,  

[C13] J. Engel, J. Stueckler and D. Cremers,  
Large-Scale Direct SLAM with Stereo Cameras,  

[C14] D. Caruso, J. Engel and D. Cremers,  
Large-Scale Direct SLAM for Omnidirectional Cameras,  
[C15] Y. Tao, R. Triebel and D. Cremers, 
Semi-supervised Online Learning for Efficient Classification of Objects in 3D Data Streams, 

[C16] R. Maier, J. Stueckler and D. Cremers, 
Super-Resolution Keyframe Fusion for 3D Modeling with High-Quality Textures, 

[C17] V. Usenko, J. Engel, J. Stueckler and D. Cremers, 
Reconstructing Street-Scenes in Real-Time From a Driving Car, 

[C18] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers, 
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images, 

[C19] E. Rodola, M. Moeller and D. Cremers, 
Point-wise Map Recovery and Refinement from Functional Correspondence, 
Proceedings Vision, Modeling and Visualization (VMV), Aachen, Germany, 2015, Received the Best Paper Award.

[C20] C. Kerl, J. Stueckler and D. Cremers, 
Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras, 
*IEEE International Conference on Computer Vision (ICCV)*, Santiago, Chile, 2015.

[C21] M. Souiai, M. R. Oswald, Y. Kee, J. Kim, M. Pollefeys and D. Cremers, 
Entropy Minimization for Convex Relaxation Approaches, 
*IEEE International Conference on Computer Vision (ICCV)*, Santiago, Chile, 2015.

[C22] F. Stark, C. Hazrba, R. Triebel and D. Cremers, 
CAPTCHA Recognition with Active Deep Learning, 
*GCPR Workshop on New Challenges in Neural Computation*, Aachen, Germany, 2015.

Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations, 
*IEEE International Conference on Computer Vision (ICCV)*, Santiago, Chile, 2015.

q-Space Deep Learning for Twelve-Fold Shorter and Model-Free Diffusion MRI Scans, 
*Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Munich, Germany, October 2015.
Publications

[J1] B. Goldluecke, M. Aubry, K. Kolev and D. Cremers,
A Super-resolution Framework for High-Accuracy Multiview Reconstruction,

[J2] E. Strekalovskiy, A. Chambolle and D. Cremers,
Convex Relaxation of Vectorial Problems with Coupled Regularization,

[J3] J. Engel, J. Sturm and D. Cremers,
Scale-Aware Navigation of a Low-Cost Quadrocopter with a Monocular Camera,

[J4] E. Rodola, S. Rota Bulo and D. Cremers,
Robust Region Detection via Consensus Segmentation of Deformable Shapes,

[B1] D. Cremers, I. Reid, H. Saito and M.-S. Yang (Editors),
*Computer Vision: ACCV 2014*,
Springer 2014.

Direct Reconstruction of the Average Diffusion Propagator with Simultaneous Compressed-Sensing-Accelerated Diffusion Spectrum Imaging and Image Denoising by Means of Total Generalized Variation Regularization,

Semi-Joint Reconstruction for Diffusion MRI Denoising Imposing Similarity of Edges in Similar Diffusion-Weighted Images,

Improved Diffusion Kurtosis Imaging and Direct Propagator Estimation Using 6-D Compressed Sensing,

Joint Super-Resolution Using Only One Anisotropic Low-Resolution Image per q-Space Coordinate,

[C5] D. Weikersdorfer, D. B. Adrian, D. Cremers and J. Conrad,
Event-based 3D SLAM with a depth-augmented dynamic vision sensor,
*Int. Conf. on Robotics and Automation*, 2014.
Publications

[C6] F. Steinbruecker, J. Sturm and D. Cremers, 
Volumetric 3D Mapping in Real-Time on a CPU, 
Int. Conf. on Robotics and Automation, Hongkong, China, 2014.

[C7] E. Rodola, S. Rota Bulo, T. Windheuser, M. Vestner and D. Cremers, 
Dense Non-Rigid Shape Correspondence Using Random Forests, 

[C8] Y. Kee, M. Souiai, D. Cremers and J. Kim, 
Sequential Convex Relaxation for Mutual-Information-Based Unsupervised Figure-Ground Segmentation, 

[C9] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers, 
Collision Avoidance for Quadrotors with a Monocular Camera, 

[C10] J. Engel, T. Schöps and D. Cremers, 
LSD-SLAM: Large-Scale Direct Monocular SLAM, 
European Conference on Computer Vision (ECCV), September 2014, Oral Presentation.

[C11] T. Schöps, J. Engel and D. Cremers, 
Semi-Dense Visual Odometry for AR on a Smartphone, 
International Symposium on Mixed and Augmented Reality, September 2014, Best Short Paper Award.

[C12] T. Windheuser, M. Vestner, E. Rodola, R. Triebel and D. Cremers, 
Optimal Intrinsic Descriptors for Non-Rigid Shape Analysis, 
British Machine Vision Conference (BMVC), 2014.

[C13] M. Strobel, J. Diebold and D. Cremers, 
Flow and Color Inpainting for Video Completion, 
German Conference on Pattern Recognition (GCPR), Münster, Germany, September 2014, Oral Presentation.

[C14] R. Maier, J. Sturm and D. Cremers, 
Submap-based Bundle Adjustment for 3D Reconstruction from RGB-D Data, 
German Conference on Pattern Recognition (GCPR), Münster, Germany, September 2014.

[C15] T. Gurdan, M. R. Oswald, D. Gurdan and D. Cremers, 
Spatial and Temporal Interpolation of Multi-View Image Sequences, 
German Conference on Pattern Recognition (GCPR), Münster, Germany, Vol. 36, September 2014.

[C16] M. R. Oswald and D. Cremers, 
Surface Normal Integration for Convex Space-time Multi-view Reconstruction, 
British Machine Vision Conference (BMVC), 2014.

[C17] C. Nieuwenhuis, S. Hawe, M. Kleinsteuber and D. Cremers, 
Co-Sparse Textural Similarity for Interactive Segmentation, 
European Conference on Computer Vision (ECCV), 2014.

[C18] M. R. Oswald, J. Stühmer and D. Cremers, 
Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction, 
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Conference/Journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Andreux, E. Rodola, M. Aubry and D. Cremers</td>
<td>Anisotropic Laplace-Beltrami Operators for Shape Analysis</td>
<td>Sixth Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA), 2014.</td>
</tr>
</tbody>
</table>
Publications List of Publications


V. Golkov, T. Sprenger, M.I. Menzel, E.T. Tan, K.F. King, C.J. Hardy, L. Marinelli, D. Cremers and J.I. Sperl,  
**Noise Reduction in Accelerated Diffusion Spectrum Imaging through Integration of SENSE Reconstruction into Joint Reconstruction in Combination with q-Space Compressed Sensing,**  

C. Kerl, J. Sturm and D. Cremers,  
**Robust Odometry Estimation for RGB-D Cameras,**  
*Int. Conf. on Robotics and Automation,* May 2013, *Best Vision Paper Award - Finalist.*

E. Toeppe, C. Nieuwenhuis and D. Cremers,  
**Volume Constraints for Single View Reconstruction,**  
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Portland, USA, 2013.

D. Weikersdorfer, A. Schick and D. Cremers,  
**Depth-adative Supervoxels for RGB-D Video Segmentation,**  

E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,  
**Real-Time Camera Tracking and 3D Reconstruction Using Signed Distance Functions,**  

E. Bylow, J. Sturm, C. Kerl, F. Kahl and D. Cremers,  
**Direct Camera Pose Tracking and Mapping With Signed Distance Functions,**  
*Demo Track of the RGB-D Workshop on Advanced Reasoning with Depth Cameras at the Robotics: Science and Systems Conference (RSS),* June 2013.

M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,  
**A Co-occurrence Prior for Continuous Multi-Label Optimization,**  

F. Stangl, M. Souiai and D. Cremers,  
**Performance Evaluation of Narrow Band Methods for Variational Stereo,**  
*35th German Conference on Pattern Recognition (GCPR),* 2013.

T. Möllenhoff, C. Nieuwenhuis, E. Toeppe and D. Cremers,  
**Efficient Convex Optimization for Minimal Partition Problems with Volume Constraints,**  

C. Kerl, J. Sturm and D. Cremers,  
**Dense Visual SLAM for RGB-D Cameras,**  
*Proc. of the Int. Conf. on Intelligent Robot Systems (IROS),* 2013.

T. Naseer, J. Sturm and D. Cremers,  
**FollowMe: Person Following and Gesture Recognition with a Quadrocopter,**  
*Proc. of the Int. Conf. on Intelligent Robot Systems (IROS),* 2013.
[C17] M. Klodt, J. Sturm and D. Cremers, 
Scale-Aware Object Tracking with Convex Shape Constraints on RGB-D Images, 
*German Conference on Pattern Recognition (GCPR)*, Saarbrücken, Germany, September 2013.

[C18] J. Sturm, E. Bylow, F. Kahl and D. Cremers, 
Dense Tracking and Mapping with a Quadrocopter, 
*Unmanned Aerial Vehicle in Geomatics (UAV-g)*, Rostock, Germany, September 2013.

[C19] D. Bender, M. Schikora, J. Sturm and D. Cremers, 
Graph-based bundle adjustment for INS-camera calibration, 
*Unmanned Aerial Vehicle in Geomatics (UAV-g)*, Rostock, Germany, September 2013, 
Best research paper award.

[C20] J. Sturm, E. Bylow, F. Kahl and D. Cremers, 
CopyMe3D: Scanning and Printing Persons in 3D, 
*German Conference on Pattern Recognition (GCPR)*, Saarbrücken, Germany, September 2013.

[C21] E. Rodola, T. Harada, Y. Kuniyoshi and D. Cremers, 
Efficient Shape Matching using Vector Extrapolation, 

[C22] J. Engel, J. Sturm and D. Cremers, 
Semi-Dense Visual Odometry for a Monocular Camera, 
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C23] E. Rodola, A. Torsello, T. Harada, Y. Kuniyoshi and D. Cremers, 
Elastic Net Constraints for Shape Matching, 
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C24] J. Lellmann, E. Strekalovskiy, S. Koetter and D. Cremers, 
Total Variation Regularization for Functions with Values in a Manifold, 
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C25] C. Nieuwenhuis, E. Strekalovskiy and D. Cremers, 
Proportion Priors for Image Sequence Segmentation, 
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

[C26] J. Stühmer, P. Schröder and D. Cremers, 
Tree Shape Priors with Connectivity Constraints using Convex Relaxation on General Graphs, 
*IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013, Oral Presentation.

[C27] G. Kuschk and D. Cremers, 
Fast and Accurate Large-scale Stereo Reconstruction using Variational Methods, 
*ICCV Workshop on Big Data in 3D Computer Vision*, Sydney, Australia, December 2013.
Publications

[C28] M. R. Oswald and D. Cremers,
A Convex Relaxation Approach to Space Time Multi-view 3D Reconstruction,
ICCV Workshop on Dynamic Shape Capture and Analysis (4DMOD), 2013.

[C29] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers,
Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences,
IEEE International Conference on Computer Vision (ICCV), Sydney, Australia, 2013.

[C30] T. Naseer, J. Sturm and D. Cremers,
Interactive Person Following and Gesture Recognition with a Flying Robot,
Proc. of the Assistance and Service Robotics Workshop (ASROB) at the IE-
EE. Int. Conf. on Intelligent Robots and Systems (IROS), Nov. 2013.

[C31] D. Cremers, E. Rodola and T. Windheuser,
Relaxations for Minimizing Metric Distortion and Elastic Energies for 3D Sha-
pe Matching,
Actes des recontres du CIRM: Courbure discrete: thorie et applications, Vol. 3, 107-117,
2013.

[R1] M. Souiai, E. Strekalovskiy, C. Nieuwenhuis and D. Cremers,
Label Configuration Priors for Continuous Multi-Label Optimization,

[J1] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach to Minimal Partitions,

[J2] T. Schoenemann and D. Cremers,
A Coding Cost Framework for Super-resolution Motion Layer Decomposition,

[J3] T. Schoenemann, F. Kahl, S. Masnou and D. Cremers,
A linear framework for region-based image segmentation and inpainting invol-
vving curvature penalization,

[J4] D. Cremers,
Optimal Solutions for Semantic Image Decomposition,

[J5] S. Chen, D. Cremers and R. J. Radke,
Image segmentation with one shape prior - A template-based formulation,

[J6] B. Goldluecke, E. Strekalovskiy and D. Cremers,
The Natural Total Variasion Which Arises from Geometric Measure Theory,

[J7] K. Kolev, T. Brox and D. Cremers,
Fast Joint Estimation of Silhouettes and Dense 3D Geometry from Multiple
Images,


[C9] M. R. Oswald, E. Toeppe and D. Cremers,
Fast and Globally Optimal Single View Reconstruction of Curved Objects,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Providence, Rhode Island, 534-541, June 2012.

[C10] E. Strekalovskiy, A. Chambolle and D. Cremers,
A Convex Representation for the Vectorial Mumford-Shah Functional,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Providence, Rhode Island, June 2012.

[C11] J. Engel, J. Sturm and D. Cremers,
Camera-Based Navigation of a Low-Cost Quadrocopter,

[C12] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers,
A Benchmark for the Evaluation of RGB-D SLAM Systems,

[C13] J. Engel, J. Sturm and D. Cremers,
Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing,

[C14] J. Sturm, W. Burgard and D. Cremers,
Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark,

[C15] N. Ufer, M. Souiai and D. Cremers,
Wehrli 2.0: An Algorithm for Tidying up Art,

[C16] G. M. Garcia, D. A. Klein, J. Stueckler, S. Frintrop and A. B. Cremers,
Adaptive Multi-cue 3D Tracking of Arbitrary Objects,

[J1] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers,
Large-Scale Integer Linear Programming for Orientation-Preserving 3D Shape Matching,

[J2] D. Cremers and K. Kolev,
Multiview Stereo and Silhouette Consistency via Convex Functionals over Convex Domains,
Stereoscopic Scene Flow Computation for 3D Motion Understanding, 

[J4] T. Schoenemann, S. Masnou and D. Cremers, 
The Elastic Ratio: Introducing Curvature into Ratio-Based Globally Optimal 
Image Segmentation, 

[J5] A. Sellent, M. Eisemann, B. Goldluecke, D. Cremers and M. Magnor, 
Motion Field Estimation from Alternate Exposure Images, 

Merkel and D. Cremers, 
A Variational Approach to Vesicle Membrane Reconstruction from Fluorescence Imaging, 

[B1] A. Wedel and D. Cremers, 
Stereoscopic Scene Flow for 3D Motion Analysis, 
Springer 2011.

[BC1] D. Cremers, T. Pock, K. Kolev and A. Chambolle, 
Convex Relaxation Techniques for Segmentation, Stereo and Multiview Reconstruction, 

[BC2] D. Cremers, 
Image Segmentation with Shape Priors: Explicit Versus Implicit Representations, 

[C1] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers, 
Geometrically Consistent Elastic Matching of 3D Shapes: A Linear Programming Solution, 
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C2] M. Aubry, U. Schlickewei and D. Cremers, 
Pose-Consistent 3D Shape Segmentation Based on a Quantum Mechanical Feature Descriptor, 

[C3] T. Schoenemann, S. Masnou and D. Cremers, 
On a linear programming approach to the discrete Willmore boundary value problem and generalizations, 
[C4] E. Strekalovskiy and D. Cremers,  
*Total Variation for Cyclic Structures: Convex Relaxation and Efficient Minimization*,  

[C5] B. Goldluecke and D. Cremers,  
*Introducing Total Curvature for Image Processing*,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C6] E. Strekalovskiy, B. Goldluecke and D. Cremers,  
*Tight Convex Relaxations for Vector-Valued Labeling Problems*,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C7] M. Aubry, K. Kolev, B. Goldluecke and D. Cremers,  
*Decoupling Photometry and Geometry in Dense Variational Camera Calibration*,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C8] E. Strekalovskiy and D. Cremers,  
*Generalized Ordering Constraints for Multilabel Optimization*,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

*Towards a benchmark for RGB-D SLAM evaluation*,  

[C10] C. Nieuwenhuis, E. Toeppe and D. Cremers,  
*Space-Varying Color Distributions for Interactive Multiregion Segmentation: Discrete versus Continuous Approaches*,  

[C11] M. Klodt and D. Cremers,  
*A Convex Framework for Image Segmentation with Moment Constraints*,  
*IEEE International Conference on Computer Vision (ICCV)*, 2011.

[C12] M. Aubry, U. Schlickewei and D. Cremers,  
*The Wave Kernel Signature: A Quantum Mechanical Approach To Shape Analysis*,  
*IEEE International Conference on Computer Vision (ICCV) - Workshop on Dynamic Shape Capture and Analysis (4DMOD)*, 2011.

[C13] F. Steinbruecker, J. Sturm and D. Cremers,  
*Real-Time Visual Odometry from Dense RGB-D Images*,  
*Workshop on Live Dense Reconstruction with Moving Cameras at the Intl. Conf. on Computer Vision (ICCV)*, 2011.
Publications

[C14] M. Schikora, M. Oispuu, W. Koch and D. Cremers,
Multiple Source Localization Based on Biased Bearings Using the Intensity Filter - Approach and Experimental Results,

[C15] S. Madhogaria, M. Schikora, W. Koch and D. Cremers,
Pixel-based Classification Method for Detecting Unhealthy Regions in Leaf Images,
6th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF), Berlin, Germany, September 2011.

[C16] M. Schikora, W. Koch, R.L. Streit and D. Cremers,
Sequential Monte Carlo Method for the iFilter,
14th International Conference on Information Fusion (FUSION), Chicago, IL, USA, July 2011.

[C17] M. Schikora, W. Koch and D. Cremers,
Multi-object tracking via high accuracy optical flow and finite set statistics,
International Conference on Acoustics, Speech and Signal Processing (ICASSP), Prag, Czech Republic, Mai 2011.

[C18] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
Silhouette-Based Variational Methods for Single View Reconstruction,

[C19] M. R. Oswald, E. Toeppe, C. Nieuwenhuis and D. Cremers,
A Survey on Geometry Recovery from a Single Image with Focus on Curved Object Reconstruction,

[J1] T. Pock, D. Cremers, H. Bischof and A. Chambolle,
Global Solutions of Variational Models with Convex Regularization,

[J2] T. Schoenemann and D. Cremers,
A Combinatorial Solution for Model-based Image Segmentation and Real-time Tracking,

Video Processing and Computational Video,
Springer 2010.

[BC1] A. Chambolle, V. Caselles, D. Cremers, M. Novaga and T. Pock,
An Introduction to Total Variation for Image Analysis,
[C1] M. Schikora, A. Schikora, K.-H. Kogel, W. Koch and D. Cremers,
Probabilistic Classification of Disease Symptoms caused by Salmonella on Arabidopsis Plants,
5th IEEE ISIF Workshop on Sensor Data Fusion: Trends, Solutions, Applications (SDF), Leipzig, Germany, September 2010.

[C2] M. Schikora, D. Bender, D. Cremers and W. Koch,
Passive Multi-Object Localization and Tracking Using Bearing Data,

[C3] M. Schikora, D. Bender, W. Koch and D. Cremers,
Multi-target multi-sensor localization and tracking using passive antenna and optical sensors on UAVs,

[C4] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
Image-based 3D Modeling via Cheeger Sets,
Asian Conference on Computer Vision, Queenstown, New Zealand, 53-64, November 2010,
Received Honorable Mention Award.

[C5] K. Kolev, T. Pock and D. Cremers,
Anisotropic Minimal Surfaces Integrating Photoconsistency and Normal Information for Multiview Stereo,
European Conference on Computer Vision (ECCV), Heraklion, Greece, September 2010.

[C6] J. Stühmer, S. Gumhold and D. Cremers,
Real-Time Dense Geometry from a Handheld Camera,
Pattern Recognition (Proc. DAGM), Darmstadt, Germany, 11-20, September 2010.

[C7] J. Stühmer, S. Gumhold and D. Cremers,
Parallel Generalized Thresholding Scheme for Live Dense Geometry from a Handheld Camera,
ECCV Workshop on Computer Vision on GPUs (CVGPU), Heraklion, Greece, September 2010.

[C8] B. Goldluecke and D. Cremers,
An Approach to Vectorial Total Variation based on Geometric Measure Theory,

[C9] B. Goldluecke and D. Cremers,
Convex Relaxation for Multilabel Problems with Product Label Spaces,

[C10] C. Nieuwenhuis, B. Berkels, M. Rumpf and D. Cremers,
Interactive Motion Segmentation,
[J1] T. Brox and D. Cremers,
On local region models and a statistical interpretation of the piecewise smooth Mumford-Shah functional,

[J2] T. Brox, B. Rosenhahn, J. Gall and D. Cremers,
Combined region- and motion-based 3D tracking of rigid and articulated objects,

[J3] K. Kolev, M. Klodt, T. Brox and D. Cremers,
Continuous Global Optimization in Multiview 3D Reconstruction,

B-Spline Modeling of Road Surfaces with an Application to Free Space Estimation,

[B1] D. Cremers, Y. Boykov, A. Blake and F. R. Schmidt (Editors),
Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR),
Springer 2009.

Statistical and Geometrical Approaches to Visual Motion Analysis,
Springer 2009.

[C1] M. R. Oswald, E. Toeppe, K. Kolev and D. Cremers,
Non-Parametric Single View Reconstruction of Curved Objects using Convex Optimization,
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, 171-180, September 2009, Received a DAGM Paper Award.

[C2] F. R. Schmidt and D. Cremers,
A Closed-Form Solution for Image Sequence Segmentation with Dynamical Shape Priors,
*Pattern Recognition (Proc. DAGM)*, Jena, Germany, September 2009.

[C3] F. R. Schmidt, E. Toeppe and D. Cremers,
Efficient Planar Graph Cuts with Applications in Computer Vision,
*IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Miami, Florida, 351-356, June 2009, Received a CVPR Doctoral Spotlight Award.

[C4] T. Pock, A. Chambolle, H. Bischof and D. Cremers,
A Convex Relaxation Approach for Computing Minimal Partitions,
[C5] K. Kolev and D. Cremers, 
Continuous Ratio Optimization via Convex Relaxation with Applications to Multiview 3D Reconstruction, 

[C6] A. Wedel, C. Rabe, A. Meissner, U. Franke and D. Cremers, 
Detection and Segmentation of Independently Moving Objects from Dense Scene Flow, 

[C7] B. Goldluecke and D. Cremers, 
A Superresolution Framework for High-Accuracy Multiview Reconstruction, 
Pattern Recognition (Proc. DAGM), Jena, Germany, 2009, Received DAGM Best Paper Award.

[C8] B. Goldluecke and D. Cremers, 
Superresolution Texture Maps for Multiview Reconstruction, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C9] A. Sellent, M. Eisemann, B. Goldluecke, T. Pock, D. Cremers and M. Magnor, 
Variational Optical Flow from Alternate Exposure Images, 

[C10] T. Pock, D. Cremers, H. Bischof and A. Chambolle, 
An Algorithm for Minimizing the Piecewise Smooth Mumford-Shah Functional, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C11] A. Wedel, D. Cremers, T. Pock and H. Bischof, 
Structure- and Motion-adaptive Regularization for High Accuracy Optic Flow, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C12] T. Schoenemann, F. Kahl and D. Cremers, 
Curvature Regularity for Region-based Image Segmentation and Inpainting: A Linear Programming Relaxation, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C13] T. Windheuser, T. Schoenemann and D. Cremers, 
Beyond Connecting the Dots: A Polynomial-time Algorithm for Segmentation and Boundary Estimation with Imprecise User Input, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C14] F. Steinbruecker, T. Pock and D. Cremers, 
Large Displacement Optical Flow Computation without Warping, 
IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 2009.

[C15] D. Mitzel, T. Pock, T. Schoenemann and D. Cremers, 
Video Super Resolution using Duality Based TV-L1 Optical Flow, 
Pattern Recognition (Proc. DAGM), Jena, Germany, 2009.

[C16] F. Steinbruecker, T. Pock and D. Cremers, 
Advanced Data Terms for Variational Optic Flow Estimation, 
[J1] T. Brox, O. Kleinschmidt and D. Cremers,  
Efficient Nonlocal Means for Denoising of Textural Patterns,  

[J2] D. Cremers,  
Nonlinear Dynamical Shape Priors for Level Set Segmentation,  

[J3] H. Jin, D. Cremers, D. Wang, A. Yezzi, E. Prados and S. Soatto,  
3-D Reconstruction of Shaded Objects from Multiple Images Under Unknown Illumination,  

[C1] T. Schoenemann, F. R. Schmidt and D. Cremers,  
Image Segmentation with Elastic Shape Priors via Global Geodesics in Product Spaces,  

[C2] M. Unger, T. Pock, D. Cremers and H. Bischof,  
TVSeg - Interactive Total Variation Based Image Segmentation,  

[C3] T. Pock, T. Schoenemann, G. Graber, H. Bischof and D. Cremers,  
A Convex Formulation of Continuous Multi-Label Problems,  

[C4] W. Trobin, T. Pock, D. Cremers and H. Bischof,  
Continuous Energy Minimization via Repeated Binary Fusion,  

[C5] K. Kolev and D. Cremers,  
Integration of Multiview Stereo and Silhouettes via Convex Functionals on Convex Domains,  

Efficient Dense Scene Flow from Sparse or Dense Stereo Data,  

[C7] A. Wedel, T. Pock, J. Braun, U. Franke and D. Cremers,  
Duality TV-L1 Flow with Fundamental Matrix Prior,  

[C8] M. Klodt, T. Schoenemann, K. Kolev, M. Schikora and D. Cremers,  
An Experimental Comparison of Discrete and Continuous Shape Optimization Methods,  

[C9] T. Pock, M. Unger, D. Cremers and H. Bischof,  
Fast and Exact Solution of Total Variation Models on the GPU,  
[C10] A. Wedel, T. Pock, C. Zach, D. Cremers and H. Bischof,  
**An Improved Algorithm for TV-L1 Optical Flow,**  

[C11] W. Trobin, T. Pock, D. Cremers and H. Bischof,  
**An Uniﬁed Second-Order Prior for High-Accuracy Motion Estimation,**  

[C12] D. Cremers, F. R. Schmidt and F. Barthel,  
**Shape Priors in Variational Image Segmentation: Convexity, Lipschitz Continuity and Globally Optimal Solutions,**  

**Markerless Motion Capture of Man-Machine Interaction,**  

[C14] T. Schoenemann and D. Cremers,  
**Matching Non-rigidly Deformable Shapes Across Images: A Globally Optimal Solution,**  

[C15] T. Schoenemann and D. Cremers,  
**Globally Optimal Shape-based Tracking in Real-time,**  

[C16] T. Schoenemann and D. Cremers,  
**High Resolution Motion Layer Decomposition using Dual-space Graph Cuts,**  

[C17] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,  
**Modeling and Tracking Line-Constrained Mechanical Systems,**  

[C18] O. Kleinschmidt, T. Brox and D. Cremers,  
**Nonlocal texture ﬁltering with efﬁcient tree structures and invariant patch similarity measures,**  
*Int. Workshop on Local and Nonlocal Approximation*, Lausanne, Switzerland, August 2008.

[R1] A. Chambolle, D. Cremers and T. Pock,  
**A Convex Approach for Computing Minimal Partitions,**  
Publications

[J1] D. Cremers,
*Computer Lernen Sehen*,

[J2] D. Cremers, M. Rousson and R. Deriche,
*A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape*,

*Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR)*,

[BC1] T. Brox, B. Rosenhahn and D. Cremers,
*Contours, optic flow, and prior knowledge: cues for capturing 3D human motion in videos*,

[BC2] D. Cremers and M. Rousson,
*Efficient kernel density estimation of shape and intensity priors for level set segmentation*,

[C1] K. Kolev, M. Klodt, T. Brox and D. Cremers,
*Propagated Photoconsistency and Convexity in Variational Multiview 3D Reconstruction*,

[C2] K. Kolev, M. Klodt, T. Brox, S. Esedoglu and D. Cremers,
*Continuous Global Optimization in Multiview 3D Reconstruction*,

[C3] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
*Nonparametric density estimation with adaptive anisotropic kernels for human motion tracking*,

[C4] T. Schoenemann and D. Cremers,
*Globally Optimal Image Segmentation with an Elastic Shape Prior*,

[C5] T. Schoenemann and D. Cremers,
*Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs*,
[C6] F. R. Schmidt, Dirk Farin and D. Cremers, 
*Fast Matching of Planar Shapes in Sub-cubic Runtime,* 

[C7] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov, 
*Intrinsic Mean for Semimetrical Shape Retrieval via Graph Cuts,* 

[C8] A. Wedel, T. Schoenemann, T. Brox and D. Cremers, 
*WarpCut - Fast obstacle segmentation in monocular video,* 

[C9] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer, 
*Occlusion Modeling by Tracking Multiple Objects,* 

[C10] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel, 
*Online smoothing for markerless motion capture,* 

[C11] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov, 
*Efficient Shape Matching via Graph Cuts,* 

[C12] D. Cremers, 
*Nonlinear Dynamical Shape Priors for Level Set Segmentation,* 

[C13] T. Brox and D. Cremers, 
*On the Statistical Interpretation of the Piecewise Smooth Mumford-Shah Functional,* 

[C14] T. Brox and D. Cremers, 
*Iterated Nonlocal Means for Texture Restoration,* 

*Region-based Pose Tracking,* 

[C16] D. Cremers, O. Fluck, M. Rousson and S. Aharon, 
*A probabilistic level set formulation for interactive organ segmentation,* 
*Proc. of the SPIE Medical Imaging,* San Diego, USA, February 2007.
Publications

[R1] T. Brox, O. Kleinschmidt and D. Cremers,
Iterated and Efficient Nonlocal Means for Denoising of Textural Patterns,

[J1] D. Cremers,
Dynamical statistical shape priors for level set based tracking,

[J2] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,

[J3] D. Cremers, N. Sochen and C. Schnörr,
A multiphase dynamic labeling model for variational recognition-driven image segmentation,

[J4] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,
Integral invariants for shape matching,

[BC1] D. Cremers and T. Kohlberger,
Probabilistic kernel PCA and its application to statistical shape modeling and inference,

[BC2] S. Manay, D. Cremers, B. W. Hong, A. Yezzi and S. Soatto,
Integral Invariants and Shape Matching,
Statistical analysis of shapes (modeling and simulation in science, engineering and technology), Birkhauser, 137-167, May 2006.

[C1] F. R. Schmidt, M. Clausen and D. Cremers,
Shape Matching by Variational Computation of Geodesics on a Manifold,

[C2] T. Schoenemann and D. Cremers,
Near Real-time Motion Segmentation using Graph Cuts,

[C3] T. Brox, B. Rosenhahn, U. Kersting and D. Cremers,
Nonparametric density estimation for human pose tracking,
[C4] K. Kolev, T. Brox and D. Cremers,
Robust variational segmentation of 3D objects from multiple views,
K. Franke et al.(Ed.), Pattern Recognition (Proc. DAGM), Berlin, Germany, Springer,

[C5] A. Wedel, U. Franke, J. Klappstein, T. Brox and D. Cremers,
Realtime depth estimation and obstacle detection from monocular video,
K. Franke et al.(Ed.), Pattern Recognition (Proc. DAGM), Berlin, Germany, Springer,

[C6] Y. Boykov, V. Kolmogorov, D. Cremers and A. Delong,
An integral solution to surface evolution PDEs via Geo-Cuts,

[C7] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
A comparison of shape matching methods for contour based pose estimation,

[C8] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
High accuracy optical flow serves 3-D pose tracking: exploiting contour and flow based constraints,

[C9] D. Cremers and L. Grady,
Statistical priors for combinatorial optimization: efficient solutions via Graph Cuts,

[C10] D. Cremers, C. Guetter and C. Xu,
Nonparametric priors on the space of joint intensity distributions for non-rigid multi-modal image registration,

[C11] O. Fluck, S. Aharon, D. Cremers and M. Rousson,
GPU histogram computation,
ACM SIGGRAPH posters and demos, 2006.

[C12] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,
4D shape priors for level set segmentation of the left myocardium in SPECT sequences,
[J1] D. Cremers and S. Soatto,  
Motion Competition: A variational framework for piecewise parametric motion segmentation,  

[BC1] M. Bergtholdt, D. Cremers and C. Schnörr,  
Variational segmentation with shape priors,  

[C1] D. Cremers and G. Funka-Lea,  
Dynamical statistical shape priors for level set based tracking,  

[C2] S. Manay, D. Cremers, A. J. Yezzi and S. Soatto,  
One-shot integral invariant shape priors for variational segmentation,  

[C3] M. Rousson and D. Cremers,  
Efficient kernel density estimation of shape and intensity priors for level set segmentation,  

[C1] D. Cremers,  
Bayesian Approaches to Motion-based Image and Video Segmentation,  

[C2] D. Cremers, S. J. Osher and S. Soatto,  
Kernel density estimation and intrinsic alignment for knowledge-driven segmentation: Teaching level sets to walk,  

[C3] D. Cremers, N. Sochen and C. Schnörr,  
Multiphase dynamic labeling for variational recognition-driven image segmentation,  

[C4] H. Jin, D. Cremers, A. Yezzi and S. Soatto,  
Shedding light on stereoscopic segmentation,  
[J1] D. Cremers, T. Kohlberger and C. Schnörr,
Shape Statistics in Kernel Space for Variational Image Segmentation,

[J2] D. Cremers and C. Schnörr,
Statistical shape knowledge in variational motion segmentation,

[J3] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,
Binary partitioning, perceptual grouping, and restoration with semidefinite programming,

[C1] D. Cremers,
A variational framework for image segmentation combining motion estimation
and shape regularization,

[C2] D. Cremers,
A multiphase level set framework for variational motion segmentation,
L. D. Griffin and M. Lillhol(Eds.), *Scale-Space Methods in Computer Vision*, Isle of Skye,

[C3] D. Cremers and S. Soatto,
A pseudo-distance for shape priors in level set segmentation,

[C4] D. Cremers and S. Soatto,
Variational space-time motion segmentation,

[C5] D. Cremers, N. Sochen and C. Schnörr,
Towards Recognition-based Variational Segmentation Using Shape Priors and Dynamic Labeling,
L. D. Griffin and M. Lillhol(Eds.), *Scale-Space Methods in Computer Vision*, Isle of Skye,

[C6] D. Cremers and A. L. Yuille,
A generative model based approach to motion segmentation,
B. Michaelis and G. Krell(Eds.), *Pattern Recognition (Proc. DAGM)*, Magdeburg, Springer,

[C7] G. Doretto, D. Cremers, P. Favaro and S. Soatto,
Dynamic texture segmentation,
[J1] D. Cremers and A. V. M. Herz,  
Travelling waves of excitation in neural field models: Equivalence of rate descriptions and integrate-and-fire dynamics,  

[J2] D. Cremers, F. Tischhäuser, J. Weickert and C. Schnörr,  
Diffusion Snakes: Introducing statistical shape knowledge into the Mumford–Shah functional,  

[C1] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,  
Unsupervised Image Partitioning with Semidefinite Programming,  

[C2] D. Cremers, T. Kohlberger and C. Schnörr,  
Nonlinear shape statistics in Mumford–Shah based segmentation,  

[C3] D. Cremers and C. Schnörr,  
Motion Competition: variational integration of motion segmentation and shape regularization,  

[C4] D. Cremers and C. Schnörr,  
Statistical shape knowledge in variational motion segmentation,  
A. Pece, Y. N. Wu and R. Larsen(Eds.), *1st Internat. Workshop on Generative-Model-Based Vision*, Copenhagen, Univ. of Copenhagen, June, 2 2002.

[PhD1] D. Cremers,  
Statistical shape knowledge in variational image segmentation,  
Department of Mathematics and Computer Science, University of Mannheim, Germany, 2002.

[C1] D. Cremers, T. Kohlberger and C. Schnörr,  
Nonlinear shape statistics via kernel spaces,  

[C2] J. Keuchel, C. Schellewald, D. Cremers and C. Schnoerr,  
Convex Relaxations for Binary Image Partitioning and Perceptual Grouping,  
Radig, B., Florczyk and S.(Eds.), *Pattern Recognition*, Munich, Germany; Springer, LNCS, Vol. 2191, 353-360, Sept. 2001, Received a DAGM Paper Award.

[C3] D. Cremers, C. Schnörr and J. Weickert,  
Diffusion Snakes: Combining statistical shape knowledge and image information in a variational framework,  
N. Paragios(Ed.), *IEEE First Int. Workshop on Variational and Level Set Methods*, Vancouver, 137-144, 2001, Best Student Paper Award.
[C1] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Learning of translation invariant shape knowledge for steering diffusion snakes,

[C2] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

[R1] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

[J1] D. Cremers and A. Mielke,
Flow equations for the Héon-Heiles Hamiltonian,