Journal Articles


[J12] N. Yang, R. Wang, X. Gao and D. Cremers,
Challenges in Monocular Visual Odometry: Photometric Calibration, Motion Bias and Rolling Shutter Effect,

LED-based Photometric Stereo: Modeling, Calibration and Numerical Solution,

[J14] P. Bergmann, R. Wang and D. Cremers,
Online Photometric Calibration of Auto Exposure Video for Realtime Visual Odometry and SLAM,

[J15] E. Aljalbout, V. Golkov, Y. Siddiqui, M. Strobel and D. Cremers,
Clustering with Deep Learning: Taxonomy and New Methods,

[J16] L. Ma., J. Stueckler, T. Wu and D. Cremers,
Detailed Dense Inference with Convolutional Neural Networks via Discrete Wavelet Transform,
Aug 2018.

[J17] Tjaden, Henning, Schwanecke, Ulrich, Schömer, Elmar, Cremers and Daniel,
A Region-based Gauss-Newton Approach to Real-Time Monocular Multiple Object Tracking,

3D Deep Learning for Biological Function Prediction from Physical Fields,

Tau Like Proteins Reduce Torque Generation in Microtubule Bundles,

[J20] J. Kukacka, V. Golkov and D. Cremers,
Regularization for Deep Learning: A Taxonomy,

[J21] L. Cosmo, E. Rodola, A. Albarelli, F. Memoli and D. Cremers,
Consistent Partial Matching of Shape Collections via Sparse Modeling,

[J22] D. Boscaini, J. Masci, E. Rodola, M. M. Bronstein and D. Cremers,
Anisotropic Diffusion Descriptors,
[J23] 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,
35: 2016, Special Issue on Deep Learning.

[J24] O. Litany, E. Rodola, A. M. Bronstein, M. M. Bronstein and D. Cremers,
Non-Rigid Puzzles,

[J25] Vestner, M., Litman, R., Bronstein, A., Rodola, E., Cremers and D.,
Bayesian Inference of Bijective Non-Rigid Shape Correspondence,

[J26] J. Diebold, C. Nieuwenhuis and D. Cremers,
Midrange Geometric Interactions for Semantic Segmentation,
2015.

[J27] J. Diebold, S. Tari and D. Cremers,
The Role of Diffusion in Figure Hunt Games,

[J28] S. Madhogaria, P. M. Baggenstoss, M. Schikora, W. Koch and D. Cremers,
Car detection by fusion of HOG and causal MRF,

[J29] M. Klodt, K. Herzog, R. Töpfer and D. Cremers,
Field phenotyping of grapevine growth using dense stereo reconstruction,

[J30] E. Rodola, A. Albarelli, D. Cremers and A. Torsello,
A Simple and Effective Relevance-based Point Sampling for 3D Shapes,

[J31] R. Mecca, E. Rodola and D. Cremers,
Realistic Photometric Stereo Using Partial Differential Irradiance Equation Ratios,

[J32] T. Möllenhoff, E. Strekalovskiy, M. Möller and D. Cremers,
The Primal-Dual Hybrid Gradient Method for Semiconvex Splittings,

[J33] B. Goldluecke, M. Aubry, K. Kolev and D. Cremers,
A Super-resolution Framework for High-Accuracy Multiview Reconstruction,

[J34] E. Strekalovskiy, A. Chambolle and D. Cremers,
Convex Relaxation of Vectorial Problems with Coupled Regularization,

[J35] J. Engel, J. Sturm and D. Cremers,
Scale-Aware Navigation of a Low-Cost Quadrocopter with a Monocular Camera,
[J36] E. Rodola, S. Rota Bulo and D. Cremers,
Robust Region Detection via Consensus Segmentation of Deformable Shapes,

[J37] C. Nieuwenhuis and D. Cremers,
Spatially Varying Color Distributions for Interactive Multi-Label Segmentation,

[J38] C. Nieuwenhuis, E. Toeppe and D. Cremers,
A Survey and Comparison of Discrete and Continuous Multi-label Optimization Approaches for the Potts Model,

[J39] B. Goldluecke, E. Strekalovskiy and D. Cremers,
Tight Convex Relaxations for Vector-Valued Labeling,

[J40] F. Endres, J. Hess, J. Sturm, D. Cremers and W. Burgard,
3D Mapping with an RGB-D Camera,

[J41] Liu, Z., Beetz, M., Cremers, D., Gall, J., Li, W., Pangercic, D., Sturm, J., Tai and Y.-W.,
Introduction to the special issue on visual understanding and applications with RGB-D cameras,

[J42] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach to Minimal Partitions,

[J43] T. Schoenemann and D. Cremers,
A Coding Cost Framework for Super-resolution Motion Layer Decomposition,

[J44] T. Schoenemann, F. Kahl, S. Masnou and D. Cremers,
A linear framework for region-based image segmentation and inpainting involving curvature penalization,

[J45] D. Cremers,
Optimal Solutions for Semantic Image Decomposition,

[J46] S. Chen, D. Cremers and R. J. Radke,
Image segmentation with one shape prior - A template-based formulation,

[J47] B. Goldluecke, E. Strekalovskiy and D. Cremers,
The Natural Total Variation Which Arises from Geometric Measure Theory,
[J48] K. Kolev, T. Brox and D. Cremers,
Fast Joint Estimation of Silhouettes and Dense 3D Geometry from Multiple Images,

A. Schikora,
An image classification approach to analyze the suppression of plant immunity
by the human pathogen Salmonella Typhimurium,

[J50] D. Cremers and E. Strekalovskiy,
Total Cyclic Variation and Generalizations,

[J51] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers,
Large-Scale Integer Linear Programming for Orientation-Preserving 3D Shape Matching,
Computer Graphics Forum (Proceedings Symposium Geometry Processing), 30(5): 1471-
1480, 2011.

[J52] D. Cremers and K. Kolev,
Multiview Stereo and Silhouette Consistency via Convex Functionals over Convex Domains,

Stereoscopic Scene Flow Computation for 3D Motion Understanding,

[J54] T. Schoenemann, S. Masnou and D. Cremers,
The Elastic Ratio: Introducing Curvature into Ratio-Based Globally Optimal Image Segmentation,
20(9): 2565-2581, 2011.

[J55] 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,
Pattern Recognition, 44: 2944-2958, 2011.

[J57] T. Pock, D. Cremers, H. Bischof and A. Chambolle,
Global Solutions of Variational Models with Convex Regularization,

[J58] T. Schoenemann and D. Cremers,
A Combinatorial Solution for Model-based Image Segmentation and Real-time Tracking,
[J59] T. Brox and D. Cremers,  
On local region models and a statistical interpretation of the piecewise smooth Mumford-Shah functional,  

[J60] T. Brox, B. Rosenhahn, J. Gall and D. Cremers,  
Combined region- and motion-based 3D tracking of rigid and articulated objects,  

[J61] 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,  

[J63] T. Brox, O. Kleinschmidt and D. Cremers,  
Efficient Nonlocal Means for Denoising of Textural Patterns,  

[J64] D. Cremers,  
Nonlinear Dynamical Shape Priors for Level Set Segmentation,  

[J65] 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,  

[J66] D. Cremers,  
Computer Lernen Sehen,  

[J67] D. Cremers, M. Rousson and R. Deriche,  
A review of statistical approaches to level set segmentation: integrating color, texture, motion and shape,  

[J68] D. Cremers,  
Dynamical statistical shape priors for level set based tracking,  

[J69] D. Cremers, S. J. Osher and S. Soatto,  
Kernel density estimation and intrinsic alignment for shape priors in level set segmentation,  

[J70] D. Cremers, N. Sochen and C. Schnörr,  
A multiphase dynamic labeling model for variational recognition-driven image segmentation,  
[J71] S. Manay, D. Cremers, B.-W. Hong, A. Yezzi and S. Soatto,
Integral invariants for shape matching,

[J72] D. Cremers and S. Soatto,
Motion Competition: A variational framework for piecewise parametric motion segmentation,

[J73] D. Cremers, T. Kohlberger and C. Schnörr,
Shape Statistics in Kernel Space for Variational Image Segmentation,

[J74] D. Cremers and C. Schnörr,
Statistical shape knowledge in variational motion segmentation,

[J75] J. Keuchel, C. Schnörr, C. Schellewald and D. Cremers,
Binary partitioning, perceptual grouping, and restoration with semidefinite programming,

[J76] D. Cremers and A. V. M. Herz,
Travelling waves of exitation in neural field models: Equivalence of rate descriptions and integrate-and-fire dynamics,

[J77] D. Cremers, F. Tischhäuser, J. Weickert and C. Schnörr,
Diffusion Snakes: Introducing statistical shape knowledge into the Mumford–Shah functional,

[J78] D. Cremers and A. Mielke,
Flow equations for the Hénon-Heiles Hamiltonian,

Books

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

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

Book Chapters

[BC1] Vestner, M., Rodola, E., Windheuser, T., Bulo, Rota Bulo, S., Cremers and D.,
Applying Random Forests to the Problem of Dense Non-rigid Shape Correspondence,


Author: D. Cremers

List of Publications

[BC12] 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.

Conference and Workshop Papers

[C1] Sang, L., Haefner, B., Cremers and D.,
Inferring Super-Resolution Depth from a Moving Light-Source Enhanced RGB-D Sensor: A Variational Approach,
IEEE Winter Conference on Applications of Computer Vision (WACV), Colorado, USA, March 2020, Spotlight Presentation.

[C2] R. Wang, N. Yang, J. Stueckler and D. Cremers,
DirectShape: Photometric Alignment of Shape Priors for Visual Vehicle Pose and Shape Estimation,

[C3] A. Vasilev, V. Golkov, M. Meissner, I. Lipp, E. Sgarlata, V. Tomassini, D. K. Jones and D. Cremers,
q-Space Novelty Detection with Variational Autoencoders,
MICCAI 2019 International Workshop on Computational Diffusion MRI, 2019, Oral Presentation.

[C4] P. Swazinna, V. Golkov, I. Lipp, E. Sgarlata, V. Tomassini, D. K. Jones and D. Cremers,
Negative-Unlabeled Learning for Diffusion MRI,
2019.

[C5] T. Möllenhoff and D. Cremers,
Lifting Vectorial Variational Problems: A Natural Formulation based on Geometric Measure Theory and Discrete Exterior Calculus,
2019, Oral Presentation.

[C6] Haefner, B., Ye, Z., Gao, M., Wu, T., Queau, Y., Cremers and D.,
Variational Uncalibrated Photometric Stereo under General Lighting,
International Conference on Computer Vision (ICCV), Seoul, South Korea, October 2019.

[C7] Q. Khan, P. Wenzel, D. Cremers and L. Leal-Taixe,
Towards Generalizing Sensorimotor Control Across Weather Conditions,

[C8] M. Moeller, T. Möllenhoff and D. Cremers,
Controlling Neural Networks via Energy Dissipation,
International Conference on Computer Vision (ICCV), Seoul, South Korea, 10 2019.

[C9] S. Weiss, R. Maier, R. Westermann, D. Cremers and N. Thuerey,
Sparse Surface Constraints for Combining Physics-based Elasticity Simulation and Correspondence-Free Object Reconstruction,

[C10] D. Schubert, N. Demmel, L. von Stumberg, V. Usenko and D. Cremers,
Rolling-Shutter Modelling for Visual-Inertial Odometry,
November 2019.


[C22] L. von Stumberg, V. Usenko and D. Cremers, 
Direct Sparse Visual-Inertial Odometry using Dynamic Marginalization, 
May 2018.

[C23] D. Schubert, T. Goll, N. Demmel, V. Usenko, J. Stueckler and D. Cremers, 
The TUM VI Benchmark for Evaluating Visual-Inertial Odometry, 
October 2018.

[C24] X. Gao, R. Wang, N. Demmel and D. Cremers, 
LDSO: Direct Sparse Odometry with Loop Closure, 
iros, October 2018.

[C25] Z. Lähner, D. Cremers and T. Tung, 
DeepWrinkles: Accurate and Realistic Clothing Modeling, 
September 2018, Oral Presentation.

[C26] D. Schubert, N. Demmel, V. Usenko, J. Stueckler and D. Cremers, 
Direct Sparse Odometry With Rolling Shutter, 
September 2018, Oral Presentation.

[C27] V. Usenko, N. Demmel and D. Cremers, 
The Double Sphere Camera Model, 

[C28] I. Chiotellis, F. Zimmermann, D. Cremers and R. Triebel, 
Incremental Semi-Supervised Learning from Streams for Object Classification, 

[C29] P. Wenzel, Q. Khan, D. Cremers and L. Leal-Taixe, 
Modular Vehicle Control for Transferring Semantic Information Between Weather Conditions Using GANs, 
Conference on Robot Learning (CoRL), 2018.

[C30] Haefner, B., Queau, Y., Möllenhoff, T., Cremers and D., 
Fight ill-posedness with ill-posedness: Single-shot variational depth super-resolution from shading, 

[C31] M. Jaimez, T. J. Cashman, A. Fitzgibbon, J. Gonzalez-Jimenez and D. Cremers, 
An Efficient Background Term for 3D Reconstruction and Tracking with Smooth Subdivision Surface Models, 
2017.

[C32] L. Ma, J. Stueckler, C. Kerl and D. Cremers, 
Multi-View Deep Learning for Consistent Semantic Mapping with RGB-D Cameras, 
Vancouver, Canada, Sep 2017.

[C33] Vestner, M., Litman, R., Rodola, E., Bronstein, A., Cremers and D., 
Product Manifold Filter: Non-Rigid Shape Correspondence via Kernel Density Estimation in the Product Space, 
2017.


Peng, S., Haefner, B., Queau, Y., Cremers and D., Depth Super-Resolution Meets Uncalibrated Photometric Stereo, *International Conference on Computer Vision Workshops (ICCVW)*, 2017, Oral Presentation at ICCV Workshop on Color and Photometry in Computer Vision.


Author: D. Cremers

List of Publications


[C70] R. Mecca, E. Rodola and D. Cremers,  
Analysis of Surface Parametrizations for Modern Photometric Stereo Modeling,  
*International Conference on Quality Control by Artificial Vision (QCAV)*, 2015.

[C71] 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,  
2015.

[C72] D. Mund, R. Triebel and D. Cremers,  
Active Online Confidence Boosting for Efficient Object Classification,  

q-Space Deep Learning for Twelve-Fold Shorter and Model-Free Diffusion MRI Scans,  
Munich, Germany, October 2015.

[C74] A. Dosovitskiy, P. Fischer, E. Ilg, P. Haeusser, C. Hazirbas, V. Golkov, P. van der Smagt, D. Cremers and T. Brox,  
FlowNet: Learning Optical Flow with Convolutional Networks,  
December 2015.

SPENCER: A Socially Aware Service Robot for Passenger Guidance and Help in Busy Airports,  

[C76] J. Engel, J. Stueckler and D. Cremers,  
Large-Scale Direct SLAM with Stereo Cameras,  
2015.

[C77] D. Caruso, J. Engel and D. Cremers,  
Large-Scale Direct SLAM for Omnidirectional Cameras,  
2015.

[C78] Y. Tao, R. Triebel and D. Cremers,  
Semi-supervised Online Learning for Efficient Classification of Objects in 3D Data Streams,  
2015.

[C79] R. Maier, J. Stueckler and D. Cremers,  
Super-Resolution Keyframe Fusion for 3D Modeling with High-Quality Textures,  

[C80] M. Jaimez, M. Souiai, J. Stueckler, J. Gonzalez-Jimenez and D. Cremers,  
Motion Cooperation: Smooth Piece-Wise Rigid Scene Flow from RGB-D Images,  
[C81] E. Rodola, M. Moeller and D. Cremers, 
Point-wise Map Recovery and Refinement from Functional Correspondence, 
Aachen, Germany, 2015, Received the Best Paper Award.

[C82] C. Kerl, J. Stueckler and D. Cremers, 
Dense Continuous-Time Tracking and Mapping with Rolling Shutter RGB-D Cameras, 
Santiago, Chile, 2015.

[C83] M. Souiai, M. R. Oswald, Y. Kee, J. Kim, M. Pollefeys and D. Cremers, 
Entropy Minimization for Convex Relaxation Approaches, 
Santiago, Chile, 2015.

[C84] F. Stark, C. Hazirbas, R. Triebel and D. Cremers, 
CAPTCHA Recognition with Active Deep Learning, 
GCPR Workshop on New Challenges in Neural Computation, Aachen, Germany, 2015.

[C85] J. Stühmer, S. Nowozin, A. Fitzgibbon, R. Szeliski, T. Perry, S. Acharya, D. Cremers and J. Shotton, 
Model-Based Tracking at 300Hz using Raw Time-of-Flight Observations, 
Santiago, Chile, 2015.

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, 
2014.

[C87] V. Golkov, M.I. Menzel, T. Sprenger, A. Haase, D. Cremers and J.I. Sperl, 
Semi-Joint Reconstruction for Diffusion MRI Denoising Imposing Similarity of Edges in Similar Diffusion-Weighted Images, 
2014.

Improved Diffusion Kurtosis Imaging and Direct Propagator Estimation Using 6-D Compressed Sensing, 
2014.

[C89] F. Steinbruecker, J. Sturm and D. Cremers, 
Volumetric 3D Mapping in Real-Time on a CPU, 
Hongkong, China, 2014.

[C90] E. Rodola, S. Rota Bulo, T. Windheuser, M. Vestner and D. Cremers, 
Dense Non-Rigid Shape Correspondence Using Random Forests, 
2014.

[C91] Y. Kee, M. Souiai, D. Cremers and J. Kim, 
Sequential Convex Relaxation for Mutual-Information-Based Unsupervised Figure-Ground Segmentation, 
2014.

[C92] H. Alvarez, L.M. Paz, J. Sturm and D. Cremers, 
Collision Avoidance for Quadrotors with a Monocular Camera, 
[C93] J. Engel, T. Schöps and D. Cremers, 
LSD-SLAM: Large-Scale Direct Monocular SLAM, 
September 2014, Oral Presentation.

[C94] T. Schöps, J. Engel and D. Cremers, 
Semi-Dense Visual Odometry for AR on a Smartphone, 
September 2014, Best Short Paper Award.

[C95] T. Windheuser, M. Vestner, E. Rodola, R. Triebel and D. Cremers, 
Optimal Intrinsic Descriptors for Non-Rigid Shape Analysis, 
2014.

[C96] 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.

[C97] 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.

[C98] T. Gurdan, M. R. Oswald, D. Gurdan and D. Cremers, 
Spatial and Temporal Interpolation of Multi-View Image Sequences, 
Münster, Germany, Vol. 36, September 2014.

[C99] M. R. Oswald and D. Cremers, 
Surface Normal Integration for Convex Space-time Multi-view Reconstruction, 
2014.

[C100] C. Nieuwenhuis, S. Hawe, M. Kleinsteuber and D. Cremers, 
Co-Sparse Textural Similarity for Interactive Segmentation, 
2014.

[C101] M. R. Oswald, J. Stühmer and D. Cremers, 
Generalized Connectivity Constraints for Spatio-temporal 3D Reconstruction, 

[C102] E. Strekalovskiy and D. Cremers, 
Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional, 

[C103] A. Kanezaki, E. Rodola, D. Cremers and T. Harada, 
[Taiou tenshuugou ruijido gakushuu wo mochiita goutai-higoutai buttai kenshutsu], 

[C104] M. Andreux, E. Rodola, M. Aubry and D. Cremers, 
Anisotropic Laplace-Beltrami Operators for Shape Analysis, 
Sixth Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NOR-DIA), 2014.

[C105] O. Dunkley, J. Engel, J. Sturm and D. Cremers, 
Visual-Inertial Navigation for a Camera-Equipped 25g Nano-Quadrotor, 
[C106] R. Triebel, J. Stühmer, M. Souiai and D. Cremers,
Active Online Learning for Interactive Segmentation Using Sparse Gaussian Processes,
*German Conference on Pattern Recognition*, 2014.

[C107] S. Debnath, S. S. Baishya, R. Triebel, V. Dutt and D. Cremers,
Environment-adaptive Learning: How Clustering Helps to Obtain Good Training Data,

[C108] A. Kanezaki, E. Rodola, D. Cremers and T. Harada,
Learning Similarities for Rigid and Non-Rigid Object Detection,

[C109] D. Bender, M. Schikora, J. Sturm and D. Cremers,
INS-Camera Calibration without Ground Control Points,

[C110] C. Kerl, M. Souiai, J. Sturm and D. Cremers,
Towards Illumination-invariant 3D Reconstruction using ToF RGB-D Cameras,

[C111] F. R. Schmidt, T. Windheuser, U. Schlickewei and D. Cremers,
Dense Elastic 3D Shape Matching,

[C112] M. Souiai, C. Nieuwenhuis, E. Strekalovskiy and D. Cremers,
Convex Optimization for Scene Understanding,
*ICCV Workshop on Graphical Models for Scene Understanding*, 2013.

[C113] J. Bergbauer, C. Nieuwenhuis, M. Souiai and D. Cremers,
Proximity Priors for Variational Semantic Segmentation and Recognition,
*ICCV Workshop on Graphical Models for Scene Understanding*, 2013.

[C114] V. Golkov, T. Sprenger, A. Menini, M.I. Menzel, D. Cremers and J.I. Sperl,
Effects of Low-Rank Constraints, Line-Process Denoising, and q-Space Compressed Sensing on Diffusion MR Image Reconstruction and Kurtosis Tensor Estimation,
2013, *Oral Presentation*.

[C115] V. Golkov, T. Sprenger, M.I. Menzel, D. Cremers and J.I. Sperl,
Line-Process-Based Joint SENSE Reconstruction of Diffusion Images with Intensity Inhomogeneity Correction and Noise Non-Stationarity Correction,
2013, *Certificate of Merit Award*.

[C116] V. Golkov, M.I. Menzel, T. Sprenger, A. Menini, D. Cremers and J.I. Sperl,
Reconstruction, Regularization, and Quality in Diffusion MRI Using the Example of Accelerated Diffusion Spectrum Imaging,
*16th Annual Meeting of the German Chapter of the ISMRM*, 2013, *Oral Presentation*. 


[C128] 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.

[C129] 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.

[C130] 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.

[C131] 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.

[C132] E. Rodola, T. Harada, Y. Kuniyoshi and D. Cremers, 
Efficient Shape Matching using Vector Extrapolation, 
2013.

[C133] J. Engel, J. Sturm and D. Cremers, 
Semi-Dense Visual Odometry for a Monocular Camera, 
Sydney, Australia, December 2013.

[C134] E. Rodola, A. Torsello, T. Harada, Y. Kuniyoshi and D. Cremers, 
Elastic Net Constraints for Shape Matching, 
Sydney, Australia, December 2013.

[C135] J. Lellmann, E. Strekalovskiy, S. Koetter and D. Cremers, 
Total Variation Regularization for Functions with Values in a Manifold, 
Sydney, Australia, December 2013.

[C136] C. Nieuwenhuis, E. Strekalovskiy and D. Cremers, 
Proportion Priors for Image Sequence Segmentation, 
Sydney, Australia, December 2013.

[C137] J. Stühmer, P. Schröder and D. Cremers, 
Tree Shape Priors with Connectivity Constraints using Convex Relaxation on General Graphs, 
Sydney, Australia, December 2013, Oral Presentation.

[C138] 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.

[C139] 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.
[C140] F. Steinbruecker, C. Kerl, J. Sturm and D. Cremers, 
Large-Scale Multi-Resolution Surface Reconstruction from RGB-D Sequences, 
Sydney, Australia, 2013.

[C141] 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.

[C142] D. Cremers, E. Rodola and T. Windheuser, 
Relaxations for Minimizing Metric Distortion and Elastic Energies for 3D Sha- 
pe Matching, 
2013.

[C143] F. Endres, J. Hess, N. Engelhard, J. Sturm, D. Cremers and W. Burgard, 
An Evaluation of the RGB-D SLAM System, 

[C144] T. Ruehr, J. Sturm, D. Pangeric, M. Beetz and D. Cremers, 
A Generalized Framework for Opening Doors and Drawers in Kitchen Envi- 
ronments, 

[C145] M. Schikora, A. Gning, L. Mihaylova, D. Cremers, W. Koch and R. Streit, 
Box-Particle Intensity Filter, 

[C146] M. Schikora, A. Gning, L. Mihaylova, D. Cremers and W. Koch, 
Box-Particle PHD Filter for Multi-Target Tracking, 
15th International Conference on Information Fusion (FUSION), Singapore, July 2012.

[C147] L. Zhang, J. Sturm, D. Cremers and D. Lee, 
Real-Time Human Motion Tracking using Multiple Depth Cameras, 

[C148] E. Strekalovskiy, C. Nieuwenhuis and D. Cremers, 
Nonmetric Priors for Continuous Multilabel Optimization, 
Firenze, Italy, Springer, October 2012.

[C149] T. Windheuser, H. Ishikawa and D. Cremers, 
Generalized Roof Duality for Multi-Label Optimization: Optimal Lower 
Bounds and Persistency, 
Firenze, Italy, October 2012.

[C150] T. Windheuser, H. Ishikawa and D. Cremers, 
QPBO [QPBO arugorizumu no tachika ni yoru hiretsu mojura enerugi saisho- 
ka], 
Meeting on Image Recognition and Understanding, Fukuoka, Japan, August 2012.

[C151] M. R. Oswald, E. Toeppe and D. Cremers, 
Fast and Globally Optimal Single View Reconstruction of Curved Objects, 
Providence, Rhode Island, 534-541, June 2012.
[C152] E. Strekalovskiy, A. Chambolle and D. Cremers, 
A Convex Representation for the Vectorial Mumford-Shah Functional, 
Providence, Rhode Island, June 2012.

[C153] J. Engel, J. Sturm and D. Cremers, 
Camera-Based Navigation of a Low-Cost Quadrocopter, 

[C154] J. Sturm, N. Engelhard, F. Endres, W. Burgard and D. Cremers, 
A Benchmark for the Evaluation of RGB-D SLAM Systems, 

[C155] J. Engel, J. Sturm and D. Cremers, 
Accurate Figure Flying with a Quadrocopter Using Onboard Visual and Inertial Sensing, 

[C156] J. Sturm, W. Burgard and D. Cremers, 
Evaluating Egomotion and Structure-from-Motion Approaches Using the TUM RGB-D Benchmark, 

[C157] N. Ufer, M. Souiai and D. Cremers, 
Wehrli 2.0: An Algorithm for Tidying up Art, 

[C158] T. Windheuser, U. Schlickewei, F. R. Schmidt and D. Cremers, 
Geometrically Consistent Elastic Matching of 3D Shapes: A Linear Programming Solution, 
2011.

[C159] M. Aubry, U. Schlickewei and D. Cremers, 
Pose-Consistent 3D Shape Segmentation Based on a Quantum Mechanical Feature Descriptor, 
Frankfurt, Germany, Springer, 2011.

[C160] T. Schoenemann, S. Masnou and D. Cremers, 
On a linear programming approach to the discrete Willmore boundary value problem and generalizations, 

[C161] E. Strekalovskiy and D. Cremers, 
Total Variation for Cyclic Structures: Convex Relaxation and Efficient Minimization, 

[C162] B. Goldluecke and D. Cremers, 
Introducing Total Curvature for Image Processing, 
2011.
[C163] E. Strekalovskiy, B. Goldluecke and D. Cremers, 
Tight Convex Relaxations for Vector-Valued Labeling Problems, 
2011.

[C164] M. Aubry, K. Kolev, B. Goldluecke and D. Cremers, 
Decoupling Photometry and Geometry in Dense Variational Camera Calibration, 
2011.

[C165] E. Strekalovskiy and D. Cremers, 
Generalized Ordering Constraints for Multilabel Optimization, 
2011.

[C166] J. Sturm, S. Magnenat, N. Engelhard, F. Pomerleau, F. Colas, W. Burgard, D. Cremers and R. Siegwart, 
Towards a benchmark for RGB-D SLAM evaluation, 

[C167] C. Nieuwenhuis, E. Toeppe and D. Cremers, 
Space-Varying Color Distributions for Interactive Multiregion Segmentation: Discrete versus Continuous Approaches, 
177-190, 2011.

[C168] M. Klodt and D. Cremers, 
A Convex Framework for Image Segmentation with Moment Constraints, 
2011.

[C169] 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.

[C170] 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.

[C171] M. Schikora, M.Oispuu, W. Koch and D. Cremers, 
Multiple Source Localization Based on Biased Bearings Using the Intensity Filter - Approach and Experimental Results, 
4th IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, San Juan, Puerto Rico, December 2011.

[C172] 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.

[C173] 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.
[C174] M. Schikora, W. Koch and D. Cremers,
Multi-object tracking via high accuracy optical flow and finite set statistics,

[C175] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
*Silhouette-Based Variational Methods for Single View Reconstruction*,

[C176] 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*,

[C177] 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.

[C178] M. Schikora, D. Bender, D. Cremers and W. Koch,
*Passive Multi-Object Localization and Tracking Using Bearing Data*,

[C179] M. Schikora, D. Bender, W. Koch and D. Cremers,
*Multi-target multi-sensor localization and tracking using passive antenna and optical sensors on UAVs*,

[C180] E. Toeppe, M. R. Oswald, D. Cremers and C. Rother,
*Image-based 3D Modeling via Cheeger Sets*,
Queenstown, New Zealand, 53-64, November 2010, Received Honorable Mention Award.

[C181] J. Stühmer, S. Gumhold and D. Cremers,
*Real-Time Dense Geometry from a Handheld Camera*,
Darmstadt, Germany, 11-20, September 2010.

[C182] 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.

[C183] B. Goldluecke and D. Cremers,
*An Approach to Vectorial Total Variation based on Geometric Measure Theory*,
2010.
B. Goldluecke and D. Cremers,  
Convex Relaxation for Multilabel Problems with Product Label Spaces,  
2010.

M. R. Oswald, E. Toeppe, K. Kolev and D. Cremers,  
Non-Parametric Single View Reconstruction of Curved Objects using Convex  
Optimization,  
Jena, Germany, 171-180, September 2009, Received a DAGM Paper Award.

F. R. Schmidt and D. Cremers,  
A Closed-Form Solution for Image Sequence Segmentation with Dynamical  
Shape Priors,  
Jena, Germany, September 2009.

F. R. Schmidt, E. Toeppe and D. Cremers,  
Efficient Planar Graph Cuts with Applications in Computer Vision,  
Miami, Florida, 351-356, June 2009, Received a CVPR Doctoral Spotlight Award.

T. Pock, A. Chambolle, H. Bischof and D. Cremers,  
A Convex Relaxation Approach for Computing Minimal Partitions,  

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

B. Goldluecke and D. Cremers,  
A Superresoluation Framework for High-Accuracy Multiview Reconstruction,  
Jena, Germany, 2009, Received DAGM Best Paper Award.

B. Goldluecke and D. Cremers,  
Superresoluation Texture Maps for Multiview Reconstruction,  
Kyoto, Japan, 2009.

A. Sellent, M. Eisemann, B. Goldluecke, T. Pock, D. Cremers and M. Magnor,  
Variational Optical Flow from Alternate Exposure Images,  
135-143, 2009.

T. Pock, D. Cremers, H. Bischof and A. Chambolle,  
An Algorithm for Minimizing the Piecewise Smooth Mumford-Shah Functional,  
Kyoto, Japan, 2009.

A. Wedel, D. Cremers, T. Pock and H. Bischof,  
Structure- and Motion-adaptive Regularization for High Accuracy Optic Flow,  
Kyoto, Japan, 2009.

T. Schoenemann, F. Kahl and D. Cremers,  
Curvature Regularity for Region-based Image Segmentation and Inpainting:  
A Linear Programming Relaxation,  
Kyoto, Japan, 2009.
[C196] T. Windheuser, T. Schoenemann and D. Cremers,
Beyond Connecting the Dots: A Polynomial-time Algorithm for Segmentation and Boundary Estimation with Imprecise User Input,
Kyoto, Japan, 2009.

[C197] F. Steinbruecker, T. Pock and D. Cremers,
Large Displacement Optical Flow Computation without Warping,
Kyoto, Japan, 2009.

[C198] D. Mitzel, T. Pock, T. Schoenemann and D. Cremers,
Video Super Resolution using Duality Based TV-L1 Optical Flow,
Jena, Germany, 2009.

[C199] F. Steinbruecker, T. Pock and D. Cremers,
Advanced Data Terms for Variational Optic Flow Estimation,
Braunschweig, Germany, 2009.

[C200] T. Schoenemann, F. R. Schmidt and D. Cremers,
Image Segmentation with Elastic Shape Priors via Global Geodesics in Product Spaces,

[C201] T. Pock, T. Schoenemann, G. Graber, H. Bischof and D. Cremers,
A Convex Formulation of Continuous Multi-Label Problems,
Marseille, France, October 2008.

[C202] A. Wedel, C. Rabe, T. Vaudrey, T. Brox, U. Franke and D. Cremers,
Efficient Dense Scene Flow from Sparse or Dense Stereo Data,
Marseille, France, October 2008.

[C203] A. Wedel, T. Pock, J. Braun, U. Franke and D. Cremers,
Duality TV-L1 Flow with Fundamental Matrix Prior,

[C204] M. Klodt, T. Schoenemann, K. Kolev, M. Schikora and D. Cremers,
An Experimental Comparison of Discrete and Continuous Shape Optimization Methods,
European Conference on Computer Vision (ECCV), Marseille, France, October 2008.

[C205] A. Wedel, T. Pock, C. Zach, D. Cremers and H. Bischof,
An Improved Algorithm for TV-L1 Optical Flow,

[C206] W. Trobin, T. Pock, D. Cremers and H. Bischof,
An Unbiased Second-Order Prior for High-Accuracy Motion Estimation,
Munich, Germany, Springer, , June 2008.

Markerless Motion Capture of Man-Machine Interaction,
Anchorage, Alaska, June 2008.

[C208] T. Schoenemann and D. Cremers,
Matching Non-rigidly Deformable Shapes Across Images: A Globally Optimal Solution,
Anchorage, Alaska, June 2008.
[C209] T. Schoenemann and D. Cremers,
Globally Optimal Shape-based Tracking in Real-time,
Anchorage, Alaska, June 2008.

[C210] T. Schoenemann and D. Cremers,
High Resolution Motion Layer Decomposition using Dual-space Graph Cuts,
Anchorage, Alaska, June 2008.

[C211] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
Modeling and Tracking Line-Constrained Mechanical Systems,

[C212] 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.

[C213] K. Kolev, M. Klotz, T. Brox and D. Cremers,
Propagated Photoconsistency and Convexity in Variational Multiview 3D Reconstruction,

[C214] K. Kolev, M. Klotz, T. Brox, S. Esedoglu and D. Cremers,
Continuous Global Optimization in Multiview 3D Reconstruction,

[C215] T. Brox, B. Rosenhahn, D. Cremers and H.-P. Seidel,
Nonparametric density estimation with adaptive anisotropic kernels for human motion tracking,

[C216] T. Schoenemann and D. Cremers,
Globally Optimal Image Segmentation with an Elastic Shape Prior,
Rio de Janeiro, Brazil, October 2007.

[C217] T. Schoenemann and D. Cremers,
Introducing Curvature into Globally Optimal Image Segmentation: Minimum Ratio Cycles on Product Graphs,
Rio de Janeiro, Brazil, October 2007.

[C218] F. R. Schmidt, Dirk Farin and D. Cremers,
Fast Matching of Planar Shapes in Sub-cubic Runtime,
Rio de Janeiro, Brazil, October 2007.

[C219] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
Intrinsic Mean for Semimetrical Shape Retrieval via Graph Cuts,

[C220] A. Wedel, T. Schoenemann, T. Brox and D. Cremers,
WarpCut - Fast obstacle segmentation in monocular video,
Author: D. Cremers

List of Publications

[C221] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
*Online smoothing for markerless motion capture*,

[C222] F. R. Schmidt, E. Toeppe, D. Cremers and Y. Boykov,
*Efficient Shape Matching via Graph Cuts*,

[C223] D. Cremers,
*Nonlinear Dynamical Shape Priors for Level Set Segmentation*,
2007.

[C224] T. Brox and D. Cremers,
*On the Statistical Interpretation of the Piecewise Smooth Mumford-Shah Functional*,

[C225] C. Schmaltz, B. Rosenhahn, T. Brox, D. Cremers, J. Weickert, L. Wietzke and G. Sommer,
*Region-based Pose Tracking*,

[C226] D. Cremers, O. Fluck, M. Rousson and S. Aharon,
*A probabilistic level set formulation for interactive organ segmentation*,

[C227] F. R. Schmidt, M. Clausen and D. Cremers,
*Shape Matching by Variational Computation of Geodesics on a Manifold*,

[C228] T. Schoenemann and D. Cremers,
*Near Real-time Motion Segmentation using Graph Cuts*,

[C229] T. Brox, B. Rosenhahn, U. Kersting and D. Cremers,
*Nonparametric density estimation for human pose tracking*,

[C230] A. Wedel, U. Franke, J. Klappstein, T. Brox and D. Cremers,
*Realtime depth estimation and obstacle detection from monocular video*,

[C231] Y. Boykov, V. Kolmogorov, D. Cremers and A. Delong,
*An integral solution to surface evolution PDEs via Geo-Cuts*,

[C232] B. Rosenhahn, T. Brox, D. Cremers and H.-P. Seidel,
*A comparison of shape matching methods for contour based pose estimation*,
[C233] 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,
A. Leonardis, H. Bischof and A. Pinz(Eds.), Graz, Austria, Springer, , Vol. 3952, 98-111,
May 2006.

[C234] D. Cremers and L. Grady,
Statistical priors for combinatorial optimization: efficient solutions via Graph
Cuts,
A. Leonardis, H. Bischof and A. Pinz(Eds.), Graz, Austria, Springer, , Vol. 3953, 263-274,
May 2006.

[C235] D. Cremers, C. Guetter and C. Xu,
Nonparametric priors on the space of joint intensity distributions for non-rigid
multi-modal image registration,

[C236] O. Fluck, S. Aharon, D. Cremers and M. Rousson,
GPU histogram computation,
2006.

[C237] T. Kohlberger, D. Cremers, M. Rousson and R. Ramaraj,
4D shape priors for level set segmentation of the left myocardium in SPECT
sequences,
, Vol. 4190, 92-100, October 2006.

[C238] D. Cremers and G. Funka-Lea,
Dynamical statistical shape priors for level set based tracking,
N. Paragios, F. Faugeras, T. Chan and C. Schnörr(Eds.), Intl. Workshop on Variational

[C239] S. Manay, D. Cremers, A. J. Yezzi and S. Soatto,
One-shot integral invariant shape priors for variational segmentation,

[C240] M. Rousson and D. Cremers,
Efficient kernel density estimation of shape and intensity priors for level set
segmentation,

[C241] D. Cremers, S. J. Osher and S. Soatto,
Kernel density estimation and intrinsic alignment for knowledge-driven segment-
ation: Teaching level sets to walk,

[C242] D. Cremers, N. Sochen and C. Schnörr,
Multiphase dynamic labeling for variational recognition-driven image segment-
ation,

[C243] H. Jin, D. Cremers, A. Yezzi and S. Soatto,
Shedding light on stereoscopic segmentation,
[C244] D. Cremers,
A variational framework for image segmentation combining motion estimation
and shape regularization,

[C245] D. Cremers,
A multiphase level set framework for variational motion segmentation,
L. D. Griffin and M. Lillholm(Eds.), Scale-Space Methods in Computer Vision, Isle of Skye,

[C246] D. Cremers and S. Soatto,
A pseudo-distance for shape priors in level set segmentation,
N. Paragios(Ed.), IEEE 2nd Int. Workshop on Variational, Geometric and Level Set Meth-

[C247] D. Cremers and S. Soatto,
Variational space-time motion segmentation,

[C248] D. Cremers, N. Sochen and C. Schnörr,
Towards Recognition-based Variational Segmentation Using Shape Priors and
Dynamic Labeling,
L. D. Griffin and M. Lillholm(Eds.), Scale-Space Methods in Computer Vision, Isle of Skye,

[C249] D. Cremers and A. L. Yuille,
A generative model based approach to motion segmentation,

[C250] G. Doretto, D. Cremers, P. Favaro and S. Soatto,
Dynamic texture segmentation,

[C251] J. Keuchel, C. Schnoerr, C. Schellewald and D. Cremers,
Unsupervised Image Partitioning with Semidefinite Programming,
2002.

[C252] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics in Mumford–Shah based segmentation,

[C253] D. Cremers and C. Schnörr,
Motion Competition: variational integration of motion segmentation and shape
regularization,
Paper Award.

[C254] 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.
[C255] D. Cremers, T. Kohlberger and C. Schnörr,
Nonlinear shape statistics via kernel spaces,

[C256] 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, , Vol. 2191, 353-360, Sept. 2001,
Received a DAGM Paper Award.

[C257] 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.

[C258] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Learning of translation invariant shape knowledge for steering diffusion snakes,

[C259] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,

PhDThesis

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

Technical Reports

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

[R2] A. Chambolle, D. Cremers and T. Pock,
A Convex Approach for Computing Minimal Partitions,

[R3] T. Brox, O. Kleinschmidt and D. Cremers,
Iterated and Efficient Nonlocal Means for Denoising of Textural Patterns,

[R4] D. Cremers, C. Schnörr, J. Weickert and C. Schellewald,
Diffusion Snakes using statistical shape knowledge,