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Nota di contenuto	Oral Presentations -- Relativistic Scale-Spaces -- Regularity and Scale-Space Properties of Fractional High Order Linear Filtering -- Image Features and the 1-D, 2 nd Order Gaussian Derivative Jet -- A New Technique for Local Symmetry Estimation -- Geometry of Isophote Curves -- Stability of Top-Points in Scale Space -- Discrete Representation of Top Points via Scale Space Tessellation -- A Linear Image Reconstruction Framework Based on Sobolev Type Inner Products -- Multi-scale Singularity Trees: Soft-Linked Scale-Space Hierarchies -- Image Deblurring in the Presence of Salt-and-Pepper Noise -- Phase

Contrast MRI Segmentation Using Velocity and Intensity -- Active Shape Models and Segmentation of the Left Ventricle in Echocardiography -- A Variational Image Registration Approach Based on Curvature Scale Space -- A Scale-Space Analysis of a Contour Figure Using a Crystalline Flow -- Multiscale Active Contours -- Riesz-Transforms Versus Derivatives: On the Relationship Between the Boundary Tensor and the Energy Tensor -- GET: The Connection Between Monogenic Scale-Space and Gaussian Derivatives -- Matrix-Valued Filters as Convex Programs -- Retinex by Two Bilateral Filters -- Estimation of the Optimal Variational Parameter via SNR Analysis -- A Contrast Invariant Approach to Motion Estimation -- Vortex and Source Particles for Fluid Motion Estimation -- Discrete Orthogonal Decomposition and Variational Fluid Flow Estimation -- Discontinuity-Preserving Computation of Variational Optic Flow in Real-Time -- Poster Presentations -- The Structure of Shapes Scale Space Aspects of the (pre-) Symmetry Set -- A Non-convex PDE Scale Space -- Tree Edit Distances from Singularity Theory -- The Stochastic Structure of Images -- Skeletons of 3D Shapes -- Scale-Space Generation via Uncertainty Principles -- Scale Invariant Texture Analysis Using Multi-scale Local Autocorrelation Features -- Figure Field Analysis of Linear Scale-Space Image -- Mumford-Shah Model Based Man-Made Objects Detection from Aerial Images -- A Multigrid Approach to Image Processing -- A Total Variation Motion Adaptive Deinterlacing Scheme -- A Geometric Formulation of Gradient Descent for Variational Problems with Moving Surfaces -- On Image Reconstruction from Multiscale Top Points -- Texture Mapping via Spherical Multi-dimensional Scaling -- On Similarity-Invariant Fairness Measures -- On ? Kernels, Lévy Processes, and Natural Image Statistics -- An Analysis of Variational Alignment of Curves in Images -- Enhancing Images Painted on Manifolds -- A Two-Step Area Based Method for Automatic Tight Segmentation of Zona Pellucida in HMC Images of Human Embryos -- Relations Between Higher Order TV Regularization and Support Vector Regression -- Perfusion Analysis of Nonlinear Liver Ultrasound Images Based on Nonlinear Matrix Diffusion -- Stabilised Nonlinear Inverse Diffusion for Approximating Hyperbolic PDEs -- Sparse Finite Element Level-Sets for Anisotropic Boundary Detection in 3D Images -- A Scale Space Method for Volume Preserving Image Registration -- Piecewise Constant Level Set Methods and Image Segmentation -- PDE-Based Deconvolution with Forward-Backward Diffusivities and Diffusion Tensors -- Denoising of Audio Data by Nonlinear Diffusion -- A Four-Pixel Scheme for Singular Differential Equations -- Isometric Embedding of Facial Surfaces into .

Sommario/riassunto

Welcome to the proceedings of the 5th International Conference on Scale-Space and PDE Methods in Computer Vision. The scale-space concept was introduced by Iijima more than 40 years ago and became popular later on through the works of Witkin and Koenderink. It is at the junction of three major schools of thought in image processing and computer vision: the design of ?lters, axiomatic approaches based on partial di?erential equations (PDEs), and variational methods for image regularization. Scale-space ideas belong to the mathematically best-understood approaches in image analysis. They have entered numerous successful applications in medical imaging and a number of other ?elds where they often give results of very high quality. This conference followed biennial meetings held in Utrecht, Corfu, Vancouver and Skye. It took place in a little castle (Schl¨ osschen Sch¨ onburg) near the small town of Hofgeismar, Germany. Inspired by the very successful previous meeting at Skye, we kept the style of gathering people in a slightly remote and scenic place in order to encourage many fruitful

discussions during the day and in the evening. Wereceived79fullpapersubmissionsofahighstandardthatischaracteristic for the scale-space conferences. Each paper was reviewed by three experts from the Program Committee, sometimes helped by additional reviewers. Based on theresultsofthesereviews,53paperswereaccepted. Weselected24manuscripts for oral presentation and 29 for poster presentation.