

12:00 - 12:30	Isogeometric Methods in Bridge Engineering	Weak C ¹ Dual Mortar Method and Its Application for Kirchhoff-Love Shell	New Automatic Approaches for IGA on Trimmed 2D and 3D Domains
	<i>Tore A. Helgedagsrud*, Yuri Bazilevs, Kjell M. Mathisen, Ole Oiseth</i>	<i>Di Miao*, Michael J. Borden</i>	<i>Massimilia Martinelli*, P. Antolin Sanchez, Annalisa Buffa</i>
12:30 - 2:00 pm Lunch. Zlotnik 1 & 2			
Session 3	Room 103	Room 107	Room 108
Session Chairs	<i>Ben Urick</i>	<i>Trond Kvamsdal</i>	<i>Thomas Elguedj</i>
2:00 - 4:00 pm	Industrial Applications - III	Collocation	Optimization
2:00 - 2:30	Latest Developments of the ANSA Pre-Processor for IGA Applications of LS-DYNA, in the Automotive Industry	Isogeometric Collocation in Acoustics	Explicit Structural Topology Optimization Based on Isogeometric Analysis with Trimming Technique
	<i>Lambros Rorris*, Dave Benson</i>	<i>Elena Atroshchenko*, Cosmin Anitescu, Tahsin Khajah</i>	<i>Weisheng Zhang*, Dingding Li, Xu Guo</i>
2:30 - 3:00	Machine Learning for Diagnostics and Patient-Specific Design of Bioprosthetic Heart Valves	Isogeometric Simulation Based on NURBS Collocation and Unified Space-Time Formulation	Isogeometric Shape Optimization of Curvilinearly Stiffened Aerostructures
	<i>Aditya Balue*, Sahiti Nallagonda, Fei Xu, Adarsh Krishnamurthy, Ming-Chen Hsu, Soumik Sarkar</i>	<i>Weiyin Ma*, Zulfigar Ali</i>	<i>Thibaut Hirschler*, Robin Bouclier, Arnaud Duval, T. Elguedj, J. Morlier</i>
3:00 - 3:30	Mesh Generation as the Bridge Between Design and CFD Simulation	Mixed Isogeometric Collocation Methods for Incompressible Elasticity and Poromechanics	Shape Optimization of an Acoustic Horn Using Differential Evolution and Isogeometric Analysis
	<i>John Chawner*</i>	<i>Simone Morganti*, Ferdinando Auricchio, Carlo Callari, Laura de Lorenzis, John Evans, Tom Hughes, Alessandro Reali</i>	<i>Garrett Dodgen*, Tahsin Khajah</i>
3:30 - 4:00	Hybrid 3D Modeling with CGM: A New Modeling ernal from Dassault Systemes Spatial Corporation	Reduced Integration at Superconvergent Points in Isogeometric Analysis	
	<i>Nikita Simonian*</i>	<i>Hector Gomez*, Frederik Fahrendorf, Laura de Lorenzis</i>	
4:00 - 4:30	Break		
4:30 - 5:30 pm	Panel Discussion, AT&T Room 204		
5:30 - 7:30 pm	Reception & Poster Session, Zlotnik 1 & 2		

Thursday, October 11				
7:30 AM Registration				
Session 4	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>Dave Benson</i>	<i>Yuri Bazilevs</i>	<i>Deepesh Toshniwal</i>	<i>TBA</i>
9:00 - 10:30 am	Industrial Applications - IV	Solids and Structures - I	Unstructured Spline Technologies - I	Boundary Element Methods
9:00 - 9:30	Numerical Simulation of Material Transport in Complex Neurons using Isogeometric Analysis	A New Shell Element Formulation Based on Rational Triangular Bézier Splines	A Penalized Boundary Method for Elliptic PDE's	Coupling Boundary Element and Finite Element Analysis for the Efficient Simulation of Fluid-Structure Interaction Problems
	<i>Angran Li*, Xiaoqi Chai, Yongjie Jessica Zhang, Ge Yang</i>	<i>Mehrdad Zareh*, Xiaoping Qian</i>	<i>Larry Schumaker*</i>	<i>Maximillian Harmel*, Michal P. Rajsiki, Roger A. Sauer</i>
9:30 - 10:00	Penalty Coupling of Non-matching Isogeometric Kirchhoff-Love Shell Patches with Application to Composite Wind Turbine Blades	Automatic Isogeometric Analysis Suitable Trivariate Models Generation from Standard B-REP Models	U-Splines: Splines Over Unstructured Meshes	Extended Isogeometric Boundary Element Method using the Numerical Steepest Decent
	<i>Emily Johnson*, Austin Herrema, Davide Prosperpio, Josef Kiendl, Ming-Chen Hsu</i>	<i>Tristan Maquart*, Thomas Elguedj, Anthony Gravouil, M. Rochette</i>	<i>Derek Thomas*, Luke Engvall, Steven Schmidt, Kevin Tew, Michael Scott</i>	<i>Jon Vegard Venas*, Trond Kvamsdal</i>
10:00 - 10:30	Patient-Specific Vascular Modeling of Ageing Aortic Artery Using T-Splines	B-Spline Solid Mesh Generation Based on the Equations of Linear Elasticity	Splines on Irregular Meshes	Isogeometric Energy Boundary Element Method for High Frequency Acoustics
	<i>Margherita Coda*, Robert Taylor, A. Kamesnky, F. Auricchio, Alessandro Reali</i>	<i>Hiroshi Hasebe*, Syun Morioka, Tadakatsu Imai, Takashi Nomura</i>	<i>Jorg* Peters</i>	<i>Soeren Keuchel*, Matthias Ram, Olgierd Zaleski, Otto von Estorff</i>
10:30 - 11:00	Break			
Session 5	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>Dave Benson</i>	<i>Yuri Bazilevs</i>	<i>Deepesh Toshniwal</i>	<i>Lulin Quan</i>
11:00 - 12:30 pm	Industrial Applications - V	Solids and Structures - II	Unstructured Spline Technologies - II	Analysis Aware CAGD - I
11:00 - 11:30	Prediction of Local Deformation and Fracture for High Strength Steel Members using the Isogeometric Analysis	Cost-Effective Isogeometric Analysis of Composite Structures by an Equilibrium Based Stress-Recovery Approach	Construction of Smooth B-Splines on PowerII-Sabin Triangulations	Analysis Suitable Hybrid B-reps and Hybrid V-reps for Trimmed Solids
	<i>Kenji Takada*, T. Kikuchi, T. Tsuduki, K. Sasaya, D. Benson</i>	<i>Alessandro Reali*, J-E. Dufour, P. Antolin, A. Patton, G. Sangalli, J. Kiendl, F. Auricchio</i>	<i>Hendrik Speleers*</i>	<i>Yang Song*, Elaine Cohen</i>
11:30 - 12:00	Practical Computer-Aided Technology Issues in an Advanced Manufacturing Environment	Curvilinear Coordinates Based on Kirchhoff-Love Shell Kinematics and its Application to Modeling of Biological Membranes	Geometrically Continuous Splines for Modeling and Analysis	Volumetric Modeling

	<i>Gregory Vernon*, Jeffrey Slover, Ben Brown, Justin Sorenson</i>	<i>Shiva Rudraraju*, Ritvik Vasan, Padmini Rangamani, Krishna Garikipati</i>	<i>Ahmed Blidia*, Bernard Mourrain</i>	<i>Gershon Elber*</i>
12:00 - 12:30	Recent Developments of a Pipeline Tool from Boundary Representations to Analysis-Suitable Geometries		Hybrid G^1 Boundary Elements for Poisson Boltzmann a la Isogeometric Analysis	Integration of Enriched Isogeometric Analysis with Commercial CAD Software
	<i>Takehisa Tsuduki*, Sasaya Kazushi, Kenji Takada, Tohru Kikuchi, Attila Nagy, David Benson</i>		<i>Chandrajit Bajaj*</i>	<i>Yaxiong Chen*, Chetan Jois, Ganesh Subbarayan</i>
12:30 - 2:00 pm	Lunch, Zlotnik 1&2			
Session 6	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>TBA</i>	<i>Alessandro Reali</i>	<i>Derek Thomas</i>	<i>Michael Johnson</i>
2:00 - 3:30 pm	Fluid-Structure Interaction & Fluids - I	Solids & Structures - III	Unstructured Spline Technology - III	Analysis Aware CAGD - II
2:00 - 2:30	CFD-Based Optimization of Data-Driven Mesh Deformation	Explicit Isogeometric Collocation for the Dynamics of Geometrically Exact Beams	Isogeometric Analysis on Bézier Triangulations	Quad/Hex Auto-Partitioning of CAD for IGA
	<i>Yuxuan Yu*, Yongjie Zhang, Kenji Takizawa, Tayfun Tezduyar</i>	<i>Enzo Marino*, Josef Kiendl, Laura de Lorenzis</i>	<i>Xiaoping Qian*</i>	<i>Mark Gammon*, Robin Fairey, Peter Beben, Shakeel Seebo</i>
2:30 - 3:00	Isogeometric Analysis of Thermal Multi-phase Flows and Its Applications to Bubble Dynamics and Manufacturing Processes	Isogeometric Multilayer Shells	Linear Dependence Classification for Minimal Support and LR B-Splines	Standardization and Innovative Applications Essential for Deployment of IGA in Industry
	<i>Jinhui Yan*</i>	<i>Yuri Bazilevs*, Marco Pigazzini, David Kamensky</i>	<i>Francesco Patrizi*, Tor Dokken</i>	<i>Tor Dokken, Oliver Barrowclough</i>
3:00 - 3:30	A Neumann-type Boundary Condition for Peridynamics and Its Coupling with Fluids	Gradient-Enhanced Damage Modeling for Thin Shells: Application to Isogeometric Analysis	Poly-Spline Finite Element Method	Symmetry-Aware Reparametrization
	<i>Yue Yu*, Huaiqian You, Ming-Chen Hsu</i>	<i>Marco Simon Pigazzini*, David Kamensky, Joris Remmers, Dennis A.P. van Iersel, Yuri Bazilevs</i>	<i>Teseo Schneider, Jeremie Dumas, Xifeng Gao, Mario Botsch, Daniele Panozzo, Denis Zorin</i>	<i>Lulin Quan*, Rene Hiemstra, Kendrick Shephard, Deepesh Toshniwal, Daniele Panozzo, Tom Hughes</i>
3:30 - 4:00	Break			
Session 7	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>TBA</i>	<i>Alessandro Reali</i>	<i>Derek Thomas</i>	<i>Tor Dokken</i>
4:00 - 6:00	Fluid-Structure Interaction & Fluids - II	Solids & Structures - IV	Unstructured Spline Technology - IV	Analysis Aware CAGD - III
4:00 - 4:30	A CAD-Integrated Patient-Specific Vascular Modeling Pipeline for IGA	Modelling Fibrin Network Using 3D Spatial Euler-Bernoulli Beam	Provably Good Spline Parameterization of Volumetric Models	Untrimmed Splines I: Analysis Suitable CAD
	<i>Michael Johnson*, Benjamin Urick, Travis Sanders, Shoalie S. Hossain, Yongjie Zhang, Tom Hughes</i>	<i>Soham Mane*, Manuel Rausch</i>	<i>Falal Chen*, Maodong Pan</i>	<i>Rene Hiemstra*, Kendrick Shephard, Deepesh Toshniwal, Lulin Quan, Daniele Panozzo, Tom Hughes</i>

4:30 - 5:00	An IGA Framework for Studying the Effect of 3D Shape on Plaque Vulnerability	Three-dimensional Solid Structures Simulation on Isogeometric B-rep Analysis	Bounds on the Dimension of Non-Uniform Degree Spline Spaces on Triangulations	Untrimmed Splines II: Semiautomatic Conversion from Trimmed BREPS to Watertight Models
	<i>Shoalie Hossain*, Michael J. Johnson, Travis Sanders, Tom Hughes</i>	<i>Daniel Herrero-Adan*, Riccardo Rossi, Tobias Teschemacher, R.P. Cardoso</i>	<i>Deepesh Toshniwal*, Tom Hughes</i>	<i>Kendrick Shepherd*, Rene Hiemstra, Deepesh Toshniwal</i>
5:00 - 5:30	Deforming Domains in Primary Manufacturing Methods		The Argyris Isogeometric Space on Unstructured Multi-Patch Planar Domains	Feature Preserving Hexahedral Meshing
	<i>Stefanie Elgeti*, Sebastian Eusterholz, Florian Zwicke</i>		<i>Giancarlo Sangalli*</i>	<i>Na Lei*, Xiaopeng Zheng, Zhongxuan Luo, Xianfeng Gu</i>
5:30 - 6:00	Fluid-Structure Interaction Modeling and Analysis of Transcatheter Heart Valves		Volumetric Spline Parameterization for Isogeometric Analysis with Industry Applications	Data Representation and Exchange Issues in Isogeometric Analysis (IGA).
	<i>Ming-Chen Hsu*, Michael C.H. Wu</i>		<i>Jessica Zhang*</i>	<i>Benjamin Urick*, Allison Barnard Feeney</i>
6:30 - 9:30	Conference Dinner, Salon C (3rd Floor)			

Friday, October 12

7:30 AM Registration				
Session 8	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>David Kamensky</i>	<i>Jessica Zhang</i>	<i>Rene Hiemstra</i>	<i>Kendrick Shepherd</i>
9:00 - 10:30 am	Fluid-Structure Interaction & Fluids - III	Local Refinement and Adaptivity - I	Computational Efficiency - I	Mathematics of IGA - I
9:00 - 9:30	Heart Valve Sequentially-coupled FSI Analysis with the ST-SI-TC-IGA	A Posteriori Error Estimation Based Isogeometric Method for Partial Differential Equations	An Algorithm for Tensor Product Approximation of Three-Dimensional Material Data for Implicit Dynamics	Enriched Isogeometric Analysis on Stitched NURBS Patches
	<i>Takuya Terahara*, Kenji Takizawa, Tayfun Tezduyar, Ming-Chen Hsu, Yuri Bazilevs</i>	<i>Mukesh Kumar*, Trond Kvamsdal</i>	<i>Maciej Wozniak*, Krzysztof Podsiadtc, Marcin Los, Maciej Paszynski</i>	<i>Chun-Pei Chen*, Yaxiong Chen*, Pavan K. Vaitheeswaran. Ganesh Subbarayan</i>
9:30 - 10:00	IBRA in Partitioned FSI with Application to Aeroelastic Wind Turbine Simulations	Adaptive Isogeometric Methods and Reduced Order Modeling	Automatic Variationally Stable Analysis for FE Computations Based on the DPG Framework	Explicit Basis Construction of Optimal Trial-Test Spaces using Discontinuous Petrov Galerkin for IGA
	<i>Andreas Apostolatos*, Altug Emiroglu, Shahrokh Shayegan, Roland Wuechner, Kai-Uwe Bletzinger</i>	<i>Trond Kvamsdal*, Harald van Brummelen, Eivind Fonn</i>	<i>Albert Romkes*, Victor M. Calo, Maciej Paszynski, Marcin Los, Eirik Valseth</i>	<i>Yi Wang*, Chandrajit Bajaj, Garritt Welper</i>
10:00 - 10:30	A Parametric Study of Asymmetric Heart Valves using Immersogeometric Fluid-Structure Interaction	Adaptive Level Set XFEM Topology Optimization with Hierarchical B-Splines	Domain Decomposition Algorithms for IGA and Linear Elasticity	Hexahedral Mesh Generation Based on Foliations
	<i>Heather Muchowski*, Michael C.H. Wu, Ming-Chen Hsu</i>	<i>John Evans*, Christian Messe, Tobias Gleim, Frits de Prenter, Kurt Maute</i>	<i>Olof Widlund*, Luca Pavarino, Simone Scacchi</i>	<i>David Gu*, Na Lei, Xiaopeng Zheng</i>
10:30 - 11:00	Break			
Session 9	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>David Kamensky</i>	<i>Jessica Zhang</i>	<i>Rene Hiemstra</i>	<i>Kendrick Shepherd</i>
11:00 - 12:30 pm	Fluid-Structure Interaction & Fluids - IV	Local Refinement and Adaptivity - II	Computational Efficiency - II	Mathematics of IGA - II
11:00 - 11:30	Isogeometric Hyperelastic Shell Analysis with Out-of-Plane Deformation Mapping and Application to Aorta-Wall Mechanics	B-Splines Based Discretization of Test Spaces for DPG Method for Singular Perturbation Problems	An Internodes-Based Solver for Non-Conforming Coupling of Isogeometric Discretizations of Elliptic Problems	Spectral Analysis of IGA Matrices Based on Box Splines
	<i>Kenji Takizawa*, Tayfun Tezduyar, Takafumi Sasaki, Ayaka Yoshida, Gaku Inoue</i>	<i>Jacob Salazar*, Jaime Mora, Leszek Demkowicz</i>	<i>Federica Marini, Paola Gervasio</i>	<i>Francesca Pelosi*, Carla Manni, Hendrik Speleers</i>
11:30 - 12:00	Low-Rank Isogeometric Analysis for the Boltzmann Equation	Introduction of Adaptive W-Refinement Technique in Isogeometric Analysis	Low-rank Approximation for Isogeometric Analysis	An Adaptive Contract Formulation using Hierarchical Splines with Industry Applications

	<i>Michael Abdelmalik*, Tom Hughes</i>	<i>Alireza H. Taheri, Krishnan Suresh</i>	<i>Angelos Mantzaflaris*</i>	<i>Cosmin Anitescu*, Irfan Malik, Timon Rabczuk</i>
12:00 - 12:30	A Computational Study of the Aortic Valve Function using Immersogeometric Fluid-Structure Interaction	Isogeometric Analysis with C^1 -smooth Hierarchical Splines on Planar Two-Patch Geometries	Matrix-free Weighted Quadrature for a Computationally Efficient Isogeometric k-Method	Enriched Isogeometric Analysis for Sharp Interface Moving Boundary Problems with Evolving Topologies
	<i>Rana Zakerzadeh*, Ming-Chen Hsu, Michael Sacks</i>	<i>Cesare Bracco*, Carlotta Gianneli, Mario Kapl, Rafael Vazquez</i>	<i>Mattia Tani*, Giancarlo Sangalli</i>	<i>Pavan K. Vaitheeswara*, Ganesh Subbarayan</i>
12:30 - 2:00 pm	Lunch			
Session 10	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>Kenji Takizawa</i>	<i>John Evans</i>	<i>Victor Calo</i>	<i>Giancarlo Sangalli</i>
2:00 - 3:30 pm	Fluid-Structure Interaction & Fluids - V	Local Refinement and Adaptivity - III	Computational Efficiency - III	Mathematics of IGA - III
2:00 - 2:30	Precise Isogeometric Exterior Acoustic Analysis	Joint Image Segmentation and Registration Based on a Dynamic Level Set Approach Using Truncated Hierarchical B-Splines	p -Multigrid Based Solvers for IgA	Isogeometric Parameterization Inspired by Large Elastic Deformation
	<i>Tahsin Khajah*, Vianey Villamizar</i>	<i>Aishwarya Pawar*, Yongjie Jessica Zhang, Cosmin Anitescu, Timon Rabczuk</i>	<i>Roel Tielen*, Matthias Moeller, Kees Vuik</i>	<i>Alexander Shamanskiy*, Bernd Simeon</i>
2:30 - 3:00	Spacecraft Parachute Compressible-flow Computation with Geometric-Porosity Modeling and Isogeometric Discretization	Projection and Transfer Operators in Adaptive Isogeometric Analysis with Hierarchical B-Splines	Quadrature Rules for Galerkin IgA BEM Based on Spline Quasi-Interpolation	Multipatch Coupling with C^1 -continuous Bases for Volumes and Surfaces
	<i>Taro Kanai*, Kenji Takizawa, T. Tezduyar, T. Tanaka, A.Hartmann</i>	<i>Paul Hennig*, Marreddy Ambati, Laura de Lorenzis, M. Kaestner</i>	<i>Antonella Falini*, Francesco Calabro, Alessandra Sestini</i>	<i>Chiu Ling Chan*, Cosmin Anitescu, Timon Rabczuk</i>
3:00 - 3:30	Stabilization Parameters for ST Flow Computations with Isogeometric Discretizations in Complex Geometry	S-Splines: A Simple Surface Solution for IGA and CAD	Sum Factorization Techniques in IGA	
	<i>Yuto Otoguro*, Kenji Takizawa, T. Tezduyar</i>	<i>Xin Li*, Thomas Sederberg</i>	<i>Andrea Bressan*, Stefan Takacs</i>	
3:30 - 4:00	Break			
Session 11	Room 103	Room 107	Room 108	Room 105
Session Chairs	<i>Kenji Takizawa</i>	<i>John Evans</i>	<i>Hector Gomez</i>	<i>Giancarlo Sangalli</i>
4:00 - 5:30	Fluid-Structure Interaction & Fluids - VI	Reparameterization	Phase-Field Modeling	Mathematics of IGA - IV

4:00 - 4:30	Isogeometric Analysis for 2D and 3D MHD Subproblems: Spectral Symbol and Fast Iterative Solvers	Low Rank Parametrization of Solids	Non-homogeneous Pressure Distribution in Metamorphic Rocks	Parallel Hybrid Memory Isogeometric Alternating Directions Collocation Method
	<i>Mariarosa Mazza*, Carla Manni, Ahmed Ratnani, Stefano Serra-Capizzano, Hendrik Speleers</i>	<i>Yannick Masson*, Bert Juettler</i>	<i>Victor Calo*, Pena Clavijo, Luis Espath, Andrew Putnis</i>	<i>Maciej Wozniak*, Marcin Los, Maciej Paszynski</i>
4:30 - 5:00	On Finite Element Formulations for Phase Field Models of Two-Phase Fluid Flows	De Trimming of Trimmed Trivariate Spline Models, a Reparameterization Approach	Phase-field Methods on Deforming Surfaces	tiGAR: Automating IGA with FEniCS
	<i>Aleksander Lovric*</i>	<i>Vibeke Skytt*</i>	<i>Christopher Zimmermann*, Deepesh Toshniwal, Chad M. Landis, Tom Hughes, Kranthi Mandadpu, Roger Sauer</i>	<i>David Kamensky*, Yuri Bazilevs</i>
5:00 - 5:30			Triangulation-Based Isogeometric Analysis of the Cahn-Hilliard Phase-Field Model	Generalized Isogeometric Analysis of Thin-Walled Structures by a Differential Quadrature Hierarchical Finite Element Method Using C^1 Elements
			<i>Ruochun Zhang*, Xiaoping Qian</i>	<i>Bo Liu*, Yang Wu, Yufeng Xing</i>
6:00 - 8:30	Closing Dinner - Alumni Center			