

Preliminary Conference Schedule

DATE/TIME	SESSION OR EVENT			
	South Lobby		Ballroom 1 & 2	
SUNDAY OCTOBER 2, 2022				
9:00 am – 5:00 pm	Registration/Information			
		Tutorial 1	Leo Dorst (TBC)	
		Tutorial 2	Dietmar Hildenbrand	
6:00 – 7:30 pm	Welcome reception Art Exhibition – Alyn Rockwood			
MONDAY, OCTOBER 3, 2022				
7:30 am – 5:00 pm	Registration/ Information			
8:15 – 8:30		Welcome	General Chair David Silva	
8:30 – 9:30 am		Keynote 1	Michael Kass	Toward the Open Metaverse
9:30 – 10:10		Invited 1	Leo Dorst	They Do It With Mirrors - The Essence of PGA
10:10 – 10:30	Networking Break/ Poster Presentations			
10:30 – 11:10 am		Invited 2	Dietmar Hildenbrand	Geometric Algebra Computing for Computer Graphics Using GAALOP
11:10 – 11:40			Kai Neumann, Dietmar Hildenbrand, Florian Stock, Christian Steinmetz and Maximilian Michel	GAAAlign: Robust Sampling-based Point Cloud Registration using Geometric Algebra
11:40 am – 12:10 pm			Huijing Yao, Stephen Mann and Qinchuan Li	Line--Cyclide Intersection and Colinear Point Quadruples in the Double Conformal Model
12:10 – 12:40 pm			Anna Derevianko and Petr Vašík	On image similarity recognition using Geometric Algebra for Conics
12:40 – 2:00 pm	Networking Lunch (lunch provided)			
2:00 – 2:40 pm		Invited 3	Nek Valous	Computational image processing workflows using quaternions
2:40 – 3:10 pm			Guilherme Vieira Neto, Marcos Eduardo Valle and Wilder Lopes	Clifford Convolutional Neural Networks for Lymphoblast Image Classification
3:10 – 3:40 pm			Kristina Mullen, Avishek Mukherjee and Khandaker Rahman	Typing Gesture for One-time Authentication Using Smart Wearable
3:40 – 4:00 pm	Networking Break/ Poster Presentations			

4:00 – 4:30 pm			Leo Dorst	Complementary Orientations in Geometric Algebras
4:30 – 5:10 pm		Invited 4	Alyn Rockwood	Interpolation and Design: Lessons and Opportunities from CAGD for Geometric Algebra
5:10 – 5:50 pm		Invited 5	Werner Bengler	Illustrating Geometric Algebra and Differential Geometry in 5D Color Space
5:50 pm			Announcements	
TUESDAY, OCTOBER 4, 2022				
8:00 am – 4:00 pm	Registration/ Information			
8:30 – 9:30 am		Keynote 2	David Hestenes,	Modeling and Computing with Geometric Algebra (GA)
9:30 – 10:00 am			Garret Sobczyk	Geometric Algebras of Compatible Null Vectors
10:00 – 10:20 am	Networking Break/ Poster Presentations			
10:20 – 10:50 am		Invited 6	Andrew J. S. Hamilton	Black Hole Flight Simulation
10:50 – 11:30 am		Invited 7	Sebastian Xambó-Descamps	TBA
11:30 am – 12:00 pm			Ekaterina Filimoshina and Dmitry Shirokov	On some Lie groups in degenerate geometric algebras
12:00 – 12:40 pm		Invited 8	G. Stacey Staples	Clifford Algebras & Zeons - Geometry to Combinatorics and Beyond
12:40 – 1:30 pm	Networking Lunch (lunch provided)			
1:30 – 2:00 pm			Sebastian Xambó	Geometric Algebra Speaks Quantum Esperanto, I
2:00 – 2:30 pm			Andrew J. S. Hamilton	The Supergeometric Algebra as the Language of Physics
2:30 – 3:10 pm		Invited 9	Tristan Müller	Introduction to Quantum Computing
3:10 – 3:40 pm			Jaroslav Hrdina, Dietmar Hildenbrand, Rafael Alves, Ales Navrat, Christian Steinmetz, Carlile Lavor, Petr Vasik and Ivan Eryganov	Quantum Register Algebra: the mathematical language for quantum computing
3:40 – 4:00 pm	Networking Break/ Poster Presentations			
4:00 – 4:30 pm			Jaroslav Hrdina, Rafael Alves, Ales Navrat, Petr Vasik, Dietmar Hildenbrand, Ivan Eryganov, Carlile Lavor and Christian Steinmetz	Quantum Register Algebra: Quantum Circuits

4:30 – 5:10 pm		Invited 10	Daniel Apon	The Initial NIST Post-Quantum Cryptography Standards, and What's Next?
5:10 – 5:40 pm			Eric Wieser and Joan Lasenby	Computing with the universal properties of the Clifford algebra and the even subalgebra
6:00 pm			Announcements	
7:00 – 8:30 pm	Award Banquet Dinner			
WEDNESDAY OCTOBER 5, 2022				
8:30 – 9:10 am		Roundtable	F.G. Montoya, et al.	Geometric Algebra applied to Power System Engineering
9:10 – 9:40 am			Francisco G. Montoya and Ahmad H. Eid, A	Geometric Procedure for Computing Differential Characteristics of Multi-phase Electrical Signals using Geometric Algebra
9:40 – 10:20 am		Invited 11	Wilder Lopes	GA Increasing Performance Through Adaptive Filters and Neural Networks
10:20 – 10:40 am	Networking Break/ Poster Presentations			
10:40 – 11:10 am			Roman Byrtus and Stanislav Frolík	Notes on forward kinematics of generalised robotic snakes based on compass ruler algebra
11:10 – 11:40 am			Julio Zamora, Edgar Macias and Leobardo Campos	Hand-eye calibration using Camera's IMU sensor in QGA
11:40 am – 12:10 pm			Timothy Havel Line-Bound Vectors	Plane-Bound Bivectors and Tetrahedra in the Conformal Model of Three-Dimensional Space
12:10 pm – 12:40 pm			Vinicius Riter, Rafael Alves and Carlile Lavor	Geometric Algebra and Distance Matrices
12:40 – 2:00 pm	Networking Lunch (lunch provided)			
2:00 – 2:40 pm		Invited 12	Joan Lasenby	Improving Matrix Methods with Geometric Algebra
2:40 – 3:10 pm			Alberto Pepe, Joan Lasenby and Pablo Chacon	Geometric Algebra Models of Proteins for Three-Dimensional Structure Prediction
3:10 – 3:40 pm			Eckhard Hitzer	Inner product of two oriented points in conformal geometric algebra
3:40 – 4:00 pm	Networking Break/ Poster Presentations			
4:00 – 4:40 pm		Invited 13	Todd Eil	Closing the GA2P: Making geometric algebra a regular expression of

				aerospace engineering
4:40 – 5:10 pm			Yuhao Teng, Binghuang Pan, Jiyi Zhang, Wen Luo, Zhaoyuan Yu and Linwang Yuan	GA-MCNA: A Geometric Algebra Framework for Mission-Centric Network Analysis
5:10 – 5:40 pm			Melissa Mcleod Price and G Stacey Staples	Binary Linear Codes via Zeon and Sym- Clifford Algebras
5:40 pm			Closing ceremony	