Origami and Deployable Mechanisms

OIST Workshop, 28 – 31 May 2019

Location: OIST Conference Center, OIST, Tancha, Onna-son, Okinawa, Japan

Tuesday, 28 May 2019

9:30	Registration
9:55	**Welcome by the organizers**
10:00	Valentina Beatini Morphology of Modular Kinetic 4R Structures
10:45	Coffee break
11:00	Maurizio Brocato Streoplexy
11:45	Guimin Chen Utilizing Torsional Deflections in Crease Design for Thick Origami
12:30	Lunch
13:30	Yan Chen Programmable Origami Metamaterials
14:15	Yi-chao Chen General Variational Framework for Finding the Equilibrium Shape of a Paper Sheet Subjected to Edge Loads
15:00	Coffee break
15:15	Gregory S. Chirikjian Configuration Spaces of Origami Mechanisms, Kaleidoscopes, and Molecular Crystals
16:00	Luis Diago Development of Two Pattern Generating Methodologies for Origami Performing Robots
16:45	Coffee break
17:00	Sebastien Callens (short presentation) Bridging the Euclidean with the Hyperbolic: Origami-Inspired Self-Folding of Minimal Surface Structures
17:30	Zeyuan He (short presentation) New Types of Rigid-Foldable Quadrilateral Creased Papers
18:00	Dinner

mathematics
mechanics
materials

This event is organized by the Mathematics, Mechanics, and Materials Unit (https://groups.oist.jp/mmmu)

Wednesday, 29 May 2019

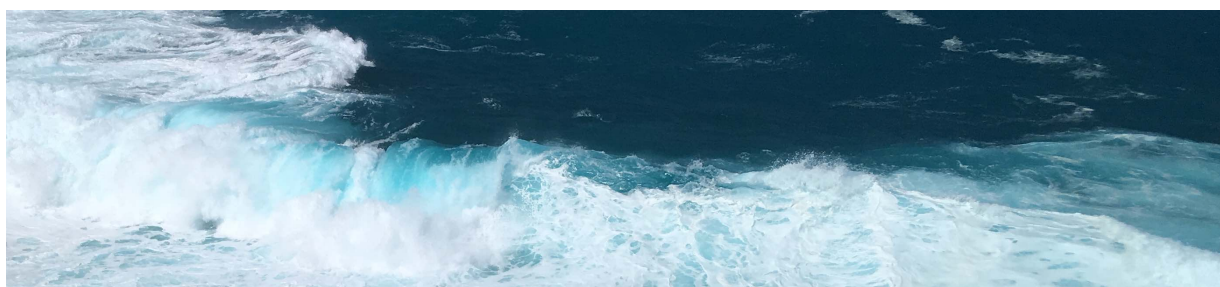|	
10:00	Opening
10:00	Matthew Gardiner Fold Printing and Fold Mapping
10:45	Coffee break
11:00	Arzu Gönenç Sorguç Origami as a Means to Explore Responsive Architecture
11:45	Larry Howell Origami-Based Compliant Mechanisms
12:30	Lunch
13:30	Sachiko Ishida Origami × Mechanical Engineering: Introduction to Origami-Based Vibration Isolator
14:15	**Guided tour over the OIST campus**
15:00	Coffee break
15:15	Robert Lang Origami Through Thick and Thin: Rigidly Foldable Mechanisms
16:00	Shengnan Lu Kirigami Derived from the Type III Bricard Linkages
16:45	Coffee break
17:00	Brian Ignaut (short presentation) Folding Product Design Using the Principles of Origami
17:30	Klara Mundilova (short presentation) On Mathematical Folding of Curved Crease Origami: Sliding Developables and Parameterizations of Folds into Cylinders and Cones
18:00	Dinner
19:00	**Open hands-on origami session**
20:00	Closing

Thursday, 30 May 2019

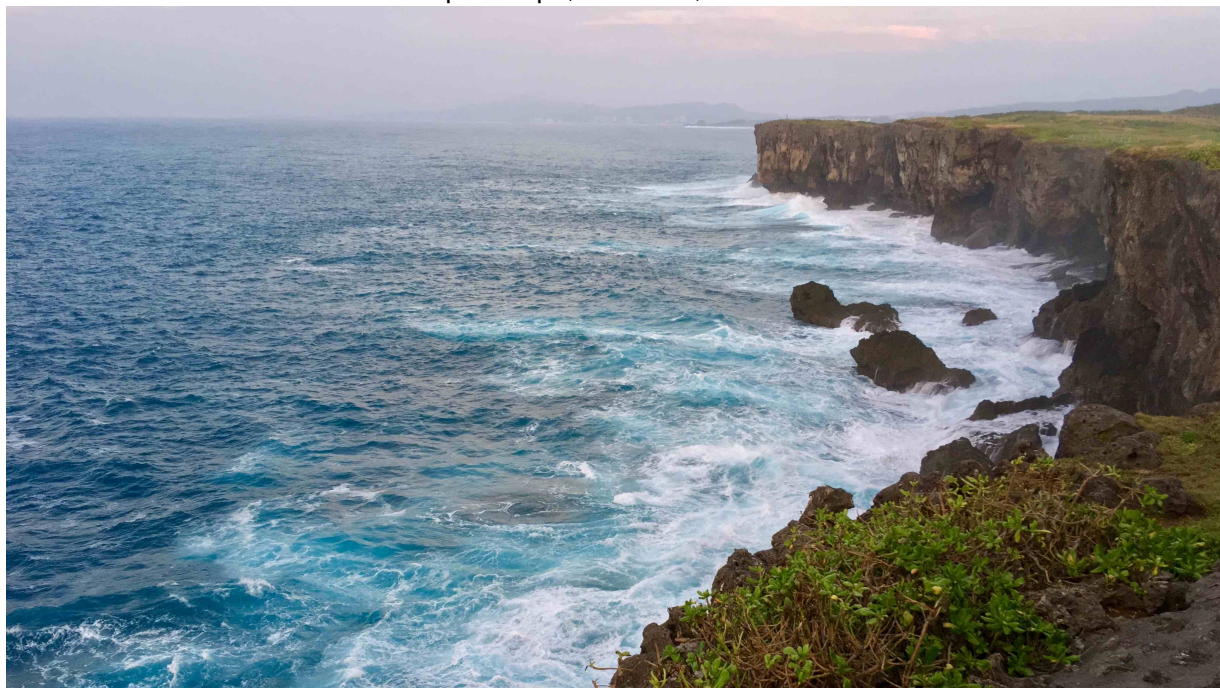|	
10:00	Opening
10:00	Reuben Margolin Making Waves. . . Analogue Kinetic Sculptures that Seek to Combine the Sensuousness of Nature with the Logic of Math
10:45	Coffee break
11:00	Andrea Micheletti Mechanisms and Self-Stresses in the Design of Rigid Origami Structures
11:45	**Guided OIST lab tour**
12:30	Lunch
13:30	Jun Mitani Simulation of Curved Folding
14:15	Yoshinobu Miyamoto Forms and Functions of RES (Rotational Erection System)
15:00	Recreational afternoon
15:00	**Excursion (pottery village, Zakimi Castle, Cape Zanpa)**
19:00	**Reception and dinner at Fugetsuro restaurant**
19:45	**Live performance at Fugetsuro restaurant**
20:30	Closing

Cape Zanpa, Yomitan, Okinawa

Friday, 31 May 2019

10:00 Opening

10:00 Andreas Müller
A Geometric Approach to the Computational Determination of the
Finite Mobility of Linkages, Reconfiguration and Singularity Analysis

10:45 Coffee break

11:00 Chie Nara
Continuous Flattening of Polyhedra Using the Kite Property

11:45 Esther Rivas-Adrover
Lattice Expandable Origami for Architecture and Design:
ORIGAMI-SCISSOR Hinged Deployable Structures

12:30 Lunch

13:30 Gianni Royer-Carfagni & Johannes Schönke
Matrix Analysis of Möbius Kaleidocycles

14:15 Tomohiro Tachi
Geometric Challenges in Structural Origami

15:00 Coffee break

15:15 Zhong You
Structures and Materials Inspired by Origami

16:00 **Open discussion about origami and mechanism research**

18:00 Dinner