

Symposium Program

Classification:

- Plenary Lecture: 40 minutes including discussion
- Oral Presentation: 20 minutes including discussion
- Short Talk by Poster Presenter: 5 minutes without discussion
- Performance Session: 120 minutes including discussion

Symbols:

- O: Opening Session
- C: Cultural Problems (Translationability, Art & Form, Pattern & Symmetry, Crafts, Japanese Patterns)
- G: Geometry (Space, Packing, Origami, Symmetry)
- P: Pattern Formation (Biology, Geology, Granules, Fluid)
- A: Architecture
- E: Exhibition

— November 15 (Monday) —

9:30–10:30 Registration

10:30–12:00 Opening Session

- O01 T. Ogawa (Plenary Talk)
Katachi and Symmetry II: The Points in Common and the Points of Difference
- O02 S. V. Jablan (Plenary Talk)
Are Borromean Links So Rare ?

13:20–14:00 Cultural Problem

- C01 A. Yanabu (Plenary)
KATACHI versus Symmetry

14:00–15:00 Geometry (Space & Packing)

- G01 L. Bourgeois, L. Bursill and Y. Bando
The Symmetry of Polyhedral Cages Made from Crystals
- G02 I. Higashi, T. Ishii, K. Kobayashi and T. Tanaka
Arrangement of the Super-Icosahedron in Boron-Rich Compounds
- G03 M. Ohtsuki, A. Minato and S. Ozawa
Mathematical Study of Conceptualization in N-Dimensional Space

15:20–16:40 Geometry (Origami)

- G04 K. Miura (Plenary Talk)
Geometry, Science, and Engineering of Infinite Concave Polyhedra

G05 K. Kaino
Folding Tetrahedron and Four-Dimensional Origami

G06 F. Paireau
The Baroque Era of Japanese Handmade Papers

17:15–18:45 Welcome Party

— **November 16 (Tuesday)** —

9:30–10:50 Geometry (Space & Packing)

G07 D. Weaire (Plenary)
The Pursuit of Perfect Packing

G08 M. Tanemura
Problems of Optimal Configuration on the Sphere

G09 R. Takaki and H. Kitaoka
Virtual Construction of Human Lung

11:00–11:40 Geometry (Symmetry)

P01 T. Hirata, H. Goto and T. Yoshimura
A Many-Body Disk Model of Slip Phenomena and Disk Contact Networks

G10 C. Schwabe
Obscure Visualizations of Logarithmic Spiral

13:20–14:40 Pattern Formation (Biology & Geology)

P02 H. Honda (Plenary)
Genes Do Not Determine A Biological Shape Directly

P03 N. Nakamura and H. Nagahama
Is Curie Symmetry Principle Constraint for Structural Geology?

P04 K. Nanjo and H. Nagahama
Symmetry of Spatial Distribution of Fracturing in Rock

15:00–17:00 Short Talk by Poster Presentater

P05 K. Ohtomo and Y. Yonezawa
Structural Properties of Generative Form by Hormonal Proliferation Algorithm

P06 M. Ohtaki, H. Honjo and H. Sakaguchi
Coupled Map Lattice Model for Pattern Formation in Diffusion Field

P07 N. Kishimoto
Basic Considerations of Structures with Fractal Properties and Their Mechanical Characteristics

P08 K. Miyamoto and A. Kosaku
Insects with Surface Iridescent Color and Their Cuticle Structures

- P09 Y. Nakashima and Y. Watanabe
Three-Dimensional Random Walk in Porous Media: Experiments and Computer Simulations
- P10 K. Otsubo, M. Washida, T. Itoh, K. Katsuura and M. Hayashi
Computer Simulation on the Gumowski—Mira Transformation
- P11 H. Yoshinaga, S. Miyazima, S. Mitake and K. Yamada
1/f Noise in Human Tapping
- P12 S. Berczi and B. Lukacs
Katachi and Symmetry Principles in the Animal Evolution
- C04 T. Takeda, Y. Akazawa, M. Toyo'oka, W. Iwamura and H. Nakano
Asymmetric Expression between Right and Left Hemiface of Human
- C05 A. Shikata and Y. Shikata
On Mathematical Analysis of Spaces and Lines in Pictures
- G13 H. Ebisui
Some Expressions of Ovaloid and Form Defined by Supporting Functions
- G14 T. Soma and Y. Watanabe
Animation of Some Truncated Polyhedrons
- G15 Y. Watanabe and S. Komori
Constrained Art
- G16 M. Sasaki
Expressing Natural Beauty by Mathematical Functions
- 17:00–19:00 Performance
- C07 S. G. Nelson, T. Endo and H. Kimura
GAGAKU: Japanese Court Music and Dance

— **November 17 (Wednesday)** —

- 9:30–10:30 Pattern Formation (Biology & Geology)
- P14 S. Matsuura
Growth Rate and Patterning of Fungal Colonies
- P15 Y. Makino
Dune Morphology and Sand Transport
- No-Code C. Schwabe's demonstration
- 11:00–12:00 Pattern Formation (Technology)
- P16 O. Sano, A. Ugawa and K. Suzuki
Pattern Formation on the Vertically Vibrated Granular Layer
- P17 T. Sugimoto
Analytical Study on Flight Formation

- P18 C. Bier
Choices and Constraints: Pattern Formation in Oriental Carpets

13:20–14:20 Architecture

- A01 M. S. Watanabe (Plenary)
Designless Design ‘the Induction Cities’—Computer-Program Generated Architecture
- A03 H. Yanai
On Some Curves in Traditional Japanese Architecture and Civil Engineering

15:00–17:00 Poster and Exhibition Tour

- G19 Y. Teshima and T. Ogawa
Axially Symmetric Packing of Equal Circles on a Sphere by the Minimum-Zenith Method
- G20 Y. Watanabe, Y. Teshima and T. Ogawa
Six-Axes Cylinder Packing
- G21 K. Sakamoto
On the Configuration of the Sequences with a Difference Equation
- G22 T. Sugimoto and T. Ogawa
Tiling Problem of Convex Pentagon
- G23 M. Kuribayashi and T. Ogawa
Two-Circle-Roller and Description of Rolling Motion without Slip: Geometrical Treatment
- E12 S. Mitamura
Hexa-Sphere in Cubic Grid (Computer Animation)

17:00–19:00 Performance

- C08 T. Saito
Aurora and Ars

— November 18 (Thursday) —

9:30–10:50 Cultural Problems (Art & Form)

- C09 T. Tarnai (Plenary)
Baskets in Craft and Mathematics
- C10 S. Kodama
Characteristics of the Historical Transitions of Computer and Holography Images
- C11 V. Pletser and D. Huylebrouck
The Prehistoric Ishango Artefact: The Missing Link in the Base 12 Dissemination

11:00–11:40 Cultural Problems (Art & Form)

- C12 S. Mizuno, M. Okada and J. Toriwaki (Plenary)
Geometrical Shape Modeling by Virtual Sculpting with CSG
No-Code R.B. Esterle's demonstration

13:20–14:50 Cultural Problems (Pattern & Symmetry)

- C14 Sz. Berczi
Katachi U Symmetry in Ornamental Art of the Last Thousands of Years of Eurasia
- C13 D. Peden
Another View: Art, Form and Physics
- C16 Y. Hattori and Y. Shikata
On Historical Analysis of Music
- C17 R. B. Esterle
Dynamic Polystring Transformahedra Modeling

15:20–17:00 Cultural Problems (Pattern & Symmetry)

- C18 Y. Shimizu (Plenary)
KANSEI Engineering—a Dispatch from Asia
- C19 H. Huzita
Symmetry and Symmetry-Breaking in Boats, Their Propulsion Methods and Navigation Techniques
- C20 R. Izuhara
A Study on Baien's Diagram, "Gengo-zu", in Terms of Symmetry

— November 19 (Friday) —

9:30–10:30 Cultural Problems (Asian Patterns)

- C21 T. Sasaki
Symmetry in the Ainu Culture
- C22 M. Moriyama and M. Moriyama
Comparison between Asymmetric Japanese IKEBANA and Symmetric Western Flower Arrangement
- C23 T. Urabe
Seventeen Kinds of Wallpaper Patterns and Traditional Japanese Patterns

10:40–12:00 Closing Session

- C24 W. Huff (Plenary)
Organizing Broken Symmetries after K. L. Wolf
- C25 D. Nagy (Plenary)
Katachi and Symmetry: Past and Future

12:10–14:00 Banquette

Exhibition (Throughout the Symposium Period)

- E01 K. Miyazaki
Higher-Dimensional Polytopes
- E02 M. Sasaki
Expressing Natural Beauty by Mathematical Functions
- E03 H. Tomura
The Pentagram and the Hexagram
- E04 N. Ueda
Implicating Rheo Movement
- E05 M. Takeno
Appearance of Magnetism 3—Shape of Appearances—
- E06 K. Isigaki
ZOEI Note
- E07 Y. Otobe
4D Polytope Wire Model
- E08 Y. Watanabe and S. Komori
1. Two Poses of a Dog, 2. With the Swiftness of Hare in Flight
- E09 T. Hozumi
Leap, Creep, Sweep—II
- E10 C. Bier
Symmetry-Breaking in Oriental Carpets
- E11 S. Mitamura
Hexa-Sphere in Cubic Grid
- E12 K. Sakamoto
1. Apollonian Packing, 2.1 & $(1 + \sqrt{5})/2$
- E13 F. Shayesteh
Reflection: Symmetry/Dissymmetry
- E14 L. Ko
Regularity and Chances (Nature, Computer and Art)
- E15 T. F. Farkas
1. Symmetry of Dimension 98, 2. Symmetry of Dimension 97
- E16 M. Jenko
People in Jeans
- E17 S. Nakamura
- E18 S. V. Jablan
OP-Tiles

- E19 C. Schwabe
Pentakis
- E20 A. Vasarhelyi
KATACHI—Xing
- E21 P. Prutkay
1. Kozmikus, 2. Spiral
- E22 F. Koning
Symmetry of Balaton
- E23 A. Felvideke
1. Cube 1, 2. Cube 2
- E24 I. Orosz
1. Round Letter 1, 2. Reflexions
- E25 M. Barabas
1. Nautilus, 2. Would, Felt, Eggs
- E26 A. Haasz
Labirint
- E27 G. Toth
Black & White I, II, III, IV
- E28 B. Faa
Fractal I, II
- E29 K. Habntos
Cube
- E30 L. Feszt
Sing I, II
- E31 N. Hashimoto
Panorama Ball I, II, III