

# Singularities of Differentiable Maps and Its applications

## In Commemoration of Goo Ishikawa's all years of hard work

Date : March 6 - 8, 2023  
Venue : 4-501, Bldg.4, Faculty of Science, Hokkaido University, Japan  
Website : <https://sites.google.com/view/thxgoo/home>  
Sponsor : JSPS Grant-in-Aid for Scientific Research (C) No. 17K05236

### [PROGRAM]

#### March 6

- 10:35– Opening
- 10:45–11:30 山本 卓宏 (東京学芸大学) / Takahiro Yamamoto (Tokyo Gakugei University)  
**Fiber singularities of continuous maps**
- 13:45–14:30 佐藤 肇 (名古屋大学) / Hajime Sato (Nagoya University)  
 **$F_4$ -接觸構造とその仲間たち /  $F_4$ -contact structures and companions**
- 14:45–15:30 待田 芳徳 (静岡大学) / Yoshinori Machida (Shizuoka University)  
**(3, 6) 分布と特異曲線 / (3, 6) distributions and singular curves**
- 15:45–16:30 山本 稔 (弘前大学) / Minoru Yamamoto (Hirosaki University)  
**3次元球面から3次元空間への折り目写像間のジェネリックホモトピーについて(経過報告)**
- 16:45–17:30 石川 剛郎 (北海道大学) / Goo Ishikawa (Hokkaido University)  
**Singularity theory over dual numbers**

#### March 7

- 9:45–10:30 大本 亨 (早稲田大学) / Toru Ohmoto (Waseda University)  
**多重特異点とヒルベルト第15問題 /  
Multi-singularities and Hilbert's 15th problem**
- 10:45–11:30 裴 東河 (東北師範大学) / Donghe Pei (Northeast Normal University)  
**Spacelike front and framed surfaces in null de Sitter -sphere**
- 13:45–14:30 佐治 健太郎 (神戸大学) / Kentaro Saji (Kobe University)  
**波面の  $D_4$  特異点の幾何 / Geometry of  $D_4$  singularities of fronts**
- 14:45–15:30 高橋 雅朋 (室蘭工業大学) /  
Masatomo Takahashi (Muroran Institute of Technology)  
**枠付き曲面の一般化について /  
On generalised framed surfaces in the Euclidean 3-space**

- 15:45–16:05 橋堀 恭矢 (北海道大学) / Kyoya Hashibori (Hokkaido University)  
**Semi-positive definite metrics related to intrinsic properties of cross caps and the Gauss-Bonnet type theorem**
- 16:10–16:30 田邊 真郷 (北海道大学) / Masato Tanabe (Hokkaido University)  
**ある関数の実解析的な延長問題**
- 16:45–17:30 石川 剛郎 (北海道大学) / Goo Ishikawa (Hokkaido University)  
**Frontal Jets**
- 17:40–18:10 記念式典 / Ceremony

## March 8

- 9:45–10:30 足立 二郎 (北海道大学) / Jiro Adachi (Hokkaido University)  
**(3, 5) 分布から Cartan(2, 3, 5) 分布へ, 存在と分類**
- 10:45–11:30 土田 旭 (育英館大学) / Asahi Tsuchida (Ikueikan University)  
**On symmetry of sub-Riemannian hypersurfaces**
- 13:45–14:30 福永 知則 (福岡工業大学) / Tomonori Fukunaga (Fukuoka Institute of Technology)  
**On the swap move of letters in words and the forbidden moves of virtual diagrams**
- 14:45–15:30 斎藤 幸子 (北海道教育大学) / Sachiko Saito (Hokkaido University of Education)  
**混合超曲面特異点とヒルベルト第 16 問題 / Mixed hypersurface singularities and Hilbert's 16th problem**
- 15:45–16:30 北川 友美子 (大分工業高等専門学校) /  
Yumiko Kitagawa (National Institute of Technology, Oita College)  
**On subriemannian structures**
- 16:45–17:30 石川 剛郎 (北海道大学) / Goo Ishikawa (Hokkaido University)  
**(4, 7)-distributions and algebraic curves on tori**

\* All times are Japan Standard Time (JST).

### Organizers:

Tomonori Fukunaga (Fukuoka Institute of Technology)  
Asahi Tsuchida (Ikueikan University)  
Toru Ohmoto (Waseda University)  
Yumiko Kitagawa (National Institute of Technology, Oita College)  
Sachiko Saito (Hokkaido University of Education)  
Jiro Adachi (Hokkaido University)  
Naohiko Kasuya (Hokkaido University)  
Masatomo Takahashi (Muroran Institute of Technology)  
Takahiro Yamamoto (Tokyo Gakugei University)