



“YOU WANT PROOF. I’LL GIVE YOU PROOF.” – MATHEMATICAL, EDUCATIONAL, & CULTURAL PERSPECTIVES

International Symposium

March 12th – 14th, 2025
University of Bremen

Prof. Dr. Christine Knipping, University of Bremen
Prof. Dr. Yusuke Shinno, Hiroshima University
Prof. Dr. Takeshi Miyakawa, Waseda University

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Venue

MZH 5100
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About the Symposium “You want proof. I’ll give you proof.” – Mathematical, educational, & cultural perspectives

“You want proof. I’ll give you proof.” (Sidney Harris, 1991) is not a reality in mathematics classrooms, yet. Not for the good, not for the bad. Harold P. Fawcett (1938) was hoping in the American context of his time that acquainting students with the nature of deductive thought and giving them an understanding of “what it really means to prove something” in the mathematics classroom could help to “cultivate critical and reflective thought” in students.

Recently, researchers in the field of mathematics education have paid more attention to study the reality of mathematics classrooms (e.g., Mariotti et al., 2018; Stylianides et al., 2023) related to proof and proving. These studies provide evidence that proof and proving is rarely a lived reality in mathematics classrooms. Often, not many opportunities are given to students in the classroom to understand mathematics critically, reflectively and from a deductive stance. Does a body of theorems and techniques to be learned rather than a focus on reasons and ways to reason hinder students’ critical thinking in mathematics and beyond? What does this mean in a world and era, where rationality and reason risk to lose their well reckoned status?

The aim of this symposium is to examine the nature of proof and proving in mathematics classrooms. We want to understand how proof and proving are organized in ordinary mathematics classrooms. From an international perspective, we are interested in investigating and comparing teaching and learning practices in the classroom, in different contexts. What theoretical and methodological approaches can be used to better understand the diversity of proof and proving across cultures and languages? Is students’ critical thinking present in these classrooms and what does that mean?

At the symposium we want to provide and discuss theoretical frameworks and empirical evidence on these complex situations from a range of perspectives, drawing on mathematical, didactical, educational, cultural, sociological and other perspectives. The participants have been chosen not only for their interest in this topic but also for the variety of approaches they take to it.

SYMPOSIUM PROGRAM

WEDNESDAY

| 12th March 2025 | | | |
|------------------------|---|--------------------------------------|--------------------------------------|
| 08.30 – 08.45 | Introduction (Prof. Dr. Christine Knipping, Prof. Dr. Yusuke Shinno, & Prof. Dr. Takeshi Miyakawa) | | |
| 08.45 – 10.05 | Keynote Prof. Dr. Leander Kempen (University of Greifswald, Germany) | | |
| 10.05 – 10.30 | <i>Coffee Break</i> | | |
| 10.30 – 11.50 | Keynote Prof. Dr. Marcus Callies (University of Bremen, Germany) | | |
| 12.00 – 13.15 | <i>Lunch</i> | | |
| 13.15 – 14.45 | Session I | Presentation (30 + 15 min) | Presentation (30 + 15 min) |
| | | Presentation (30 + 15 min) | Presentation (30 + 15 min) |
| 14.45 – 15.15 | <i>Coffee Break</i> | | |
| 15.15 – 16.45 | Session II | Presentation (30 + 15 min) | Presentation (30 + 15 min) |
| | | Presentation (30 + 15 min) | Presentation (30 + 15 min) |
| 16.45 – 17.30 | Open Discussion | | |
| 19.00 | Dinner at Ratskeller | | |

THURSDAY

| 13th March 2025 | | | |
|------------------------|--|--------------------------------------|--------------------------------------|
| 08.30 – 10.15 | Project Presentation Prof. Dr. Yusuke Shinno (Hiroshima University, Japan) & Prof. Dr. Takeshi Miyakawa (Waseda University, Japan) | | |
| 10.15 – 10.40 | <i>Coffee Break</i> | | |
| 10.40 – 12.00 | Keynote Prof. Dr. David A. Reid (Agder University, Norway) | | |
| 12.00 – 13.15 | <i>Lunch</i> | | |
| 13.15 – 14.45 | Session III | Presentation (30 + 15 min) | Presentation (30 + 15 min) |
| | | Presentation (30 + 15 min) | Presentation (30 + 15 min) |
| 14.45 – 15.15 | <i>Coffee Break</i> | | |
| 16.00 – 19.00 | Haus der Wissenschaft | | |
| 19.30 | Dinner at Schütting | | |

FRIDAY

14th March 2025

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| 09.00 – 10.20 | Keynote Dr. Mika Gabel (Afeka Academic College of Engineering, Israel) |
| 10.20 – 10.45 | <i>Coffee Break</i> |
| 10.45 – 11.45 | Open Discussion |
| 11.45 – 12.00 | Closing Remarks |
| 12.00 – 13.00 | Lunch |