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Advanced Topics in Geometry B1 (MTH.B406)

Course Syllabus

Important Pointers:

- `http://www.official.kotaroy.com/class/2025/geom-b1`
- `https://lms.s.isct.ac.jp/` (Science Tokyo LMS)

Lecture: Fridays 13:30–15:10, Lecture hall M-B43

Lecturer: Kotaro Yamada (Dept. Math.); kotaro@math.sci.isct.ac.jp

Course Description: As an application of the fundamental theorem for surface theory, construction of pseudospherical surfaces, which are local models of Lobachevsky's non-euclidean geometry, will be introduced.

Student learning outcomes: Students will learn a way to apply the fundamental theorem for surface theory, and observe various mathematical phenomena in the way of construction.

Textbooks: No textbook is set. Lecture note will be uploaded on Science Tokyo LMS within the previous day of each class.

Grading Policy:

- Graded by weekly homeworks.
- Each homework consists of (1) a problem on the topics in the lecture (up to 2 points), and (2) to present a question on the contents of the lecture, or to point out error(s) in the lecture note/the lecture (up to 3 points).
- Each homework should be submitted to Science Tokyo LMS by 10:00 on the following Tuesday of the lecture, as an pdf file in the format of the *homework sheet* (which can be downloaded from the folder "Homework Sheet" on Science Tokyo LMS). *Japanese is acceptable.*
- Questions, requests and comments (and the answers, lecturer's comments) will be disclosed on the following class.