

# Course Announcement

(Oct. 2022 – Feb. 2023 / 2 credits)

## 理論雪氷学特論 Advanced Course in Theoretical Glaciology



### **FIRST LECTURE:**

**Time:** Oct. 6 (Thu.), 14:45-16:15

**Place:** Online via Zoom (→ ELMS/Moodle)

**Instructor:** Ralf GREVE

### **Objective:**

Based on general concepts of continuum mechanics, we will study the flow and evolution of ice sheets, ice shelves, ice caps and glaciers within the Earth system.

### **Goals:**

Students will achieve a comprehensive understanding of flowing ice masses and their role within the climate system of the Earth, and they will be provided the background for carrying out own research (for instance, computer simulations) for a master or doctoral thesis.

### **Grading:**

Performance in class (discussion, questions), quizzes.

### **Schedule:**

1. Introduction; 2. Elements of continuum mechanics; 3. Constitutive equations for polycrystalline ice; 4. Large-scale dynamics of ice sheets; 5. Dynamics of glacier flow; 6. Large-scale dynamics of ice shelves; 7. Glacial isostasy.

### **Prerequisites:**

Some level of comfort in calculus and linear algebra, reasonable skills in oral and written English (which is the course language).

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**Time:** 14:45-16:15 (4<sup>th</sup> period) on **Thursdays**  
(15 lectures between Oct. 6, 2022, and Feb. 2, 2023)

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