

## 第27回 MEE SEMINAR

### MATHEMATICAL ECOLOGY & EVOLUTION

**2011年2月8日(火) 14:40~16:10**

**明治大学生田キャンパス第二校舎A館：A303**

小田急小田原線 「生田駅」から徒歩10分

又は「向ヶ丘遊園」駅北口から「明治大学正門前」行きバスで15分終点下車

詳しくは、[http://www.meiji.ac.jp/koho/campus\\_guide/](http://www.meiji.ac.jp/koho/campus_guide/) をご覧下さい

**February 8, 2011. 14:40~16:10**

**Meiji Univ. Ikuta campus A303**

# **Photophysiological responses and the structure are the key to the success of lush vegetation in Antarctic lakes**

## **Yukiko Tanabe**

### **(National Institute of Polar Research)**

#### **Abstract:**

Unique phytoplankton communities in Antarctic freshwater lakes, are one of the most luxuriant vegetation across the lake and terrestrial ecosystems in continental Antarctica. During summer ice-free conditions, the phytoplankton were exposed to high levels of photosynthetically active radiation and UV, because of the low concentration of UV-absorbing materials and the continuous solar radiation. Almost lakes were oligotrophic, with transparent. The phytoplankton communities were composed dominantly of cyanobacteria and green algae, and in a minority of mosses and diatoms, which form mat structures with vertically color pattern. Photosynthesis measurements of the phytoplankton showed that they might be in a stressed condition, however, they can grow slowly but positive activity. Photosynthetic pigments analyses revealed that, in addition to the high contents of pigments and protective-substances in the surface layer of the phytoplankton, the pigments changed the functions such as “photo-protection, light-harvesting, light-regulation” in response to changes in the light environment. With these strategy: photophysiological responses and formation of the mat structure, the phytoplankton allowed the growth and survival by using the possible light energy while preventing from death during a short but strong light summer, and were considered to lushly develop in Antarctica.

**参加自由です。皆様のお越しをお待ちしております。**

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