



# XXIX Congresso AIOL

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## Abstract book

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*"Shaping aquatic science for the future we envision"*

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XXIX Congresso  
Associazione Italiana di Oceanologia e Limnologia

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## Diatom diversity in a mountain lake assessed by microscopy and metabarcoding, case study upper lake balma

**Ulrike Obertegger<sup>1\*</sup>, Cristina Cappelletti<sup>2</sup>, Saul Blanco<sup>3</sup>, Massimo Pindo<sup>1</sup>, Marco Bertoli<sup>4</sup>, Elisabetta Pizzul<sup>4</sup>, Paolo Pastorino<sup>5</sup>, Marino Prearo<sup>5</sup>, Francesca Ciutti<sup>2</sup>**

<sup>1</sup>Idrobiologia, Fondazione E. Mach, Mach 1 - 38010 - San Michele all'Adige (Trentino-South Tyrol), Italy

<sup>2</sup>Transferimento Tecnologico, Fondazione E. Mach, Mach 1 - 38010 - San Michele all'Adige (Trentino-South Tyrol), Italy

<sup>3</sup>Departamento de Biodiversidad y Gestión Ambiental, Universidad de León, Campus de Vegazana s/n, 24071 - 24071 - Leon, Spagna

<sup>4</sup>Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta, Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta, Bologna 148 - 34127 - Torino, Italy

Corresponding author: [ulrike.obertegger@fmach.it](mailto:ulrike.obertegger@fmach.it)

Diatom diversity in mountain lakes is rarely studied. Here, diatom diversity of mountain lake Upper Lake Balma (Northern Italy) was investigated based on microscopy and metabarcoding (amplicon sequencing variants – ASV- based on the *rbcl* gene) to investigate if and how both methods provide the same biodiversity estimates. A higher diversity with metabarcoding than with microscopy was found but metabarcoding missed taxa detected with microscopy. With metabarcoding a good water quality was indicated and with microscopy a high quality was indicated. In multivariate ordination both metabarcoding and microscopy indicated seasonal differences linked to similar environmental variables (pH, conductivity, water temperature). Missing sequences for taxa of mountain lakes led to the discrepancy between metabarcoding and microscopy, a problem often encountered in metabarcoding studies. Thus, we suggest the complementary use of both methods to assess biodiversity, especially in mountain lakes.