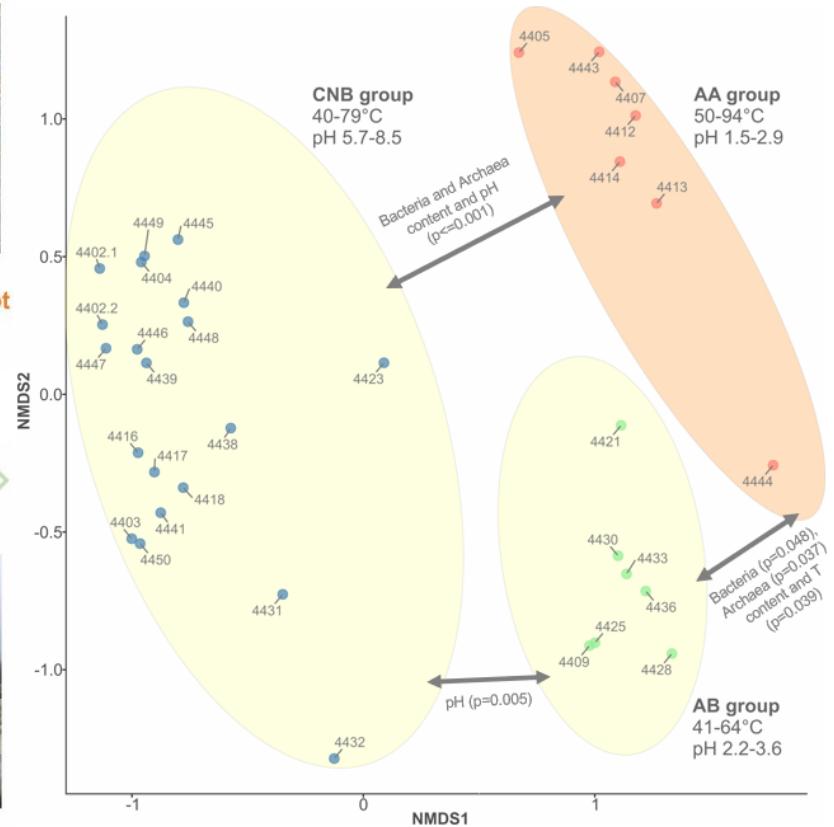




The first large-scale microbial screening of the Kuril hot springs

16S rRNA gene metabarcoding, chemical ion and elemental analysis

Clusterization of 3 distinct prokaryotic groups linked with pH and T



CNB circuneutral bacterial group

Cyano-bacterial mats up to 60°C

Aquificota and Chloroflexota autotrophy

Mesophilic and marine bacteria



Uncultured:

- '*Ca. Bathyarchaeia*' up to 8.7%
- '*Ca. Odinarchaeia*' about 0.5%
- '*Ca. Alysiospheara*' up to 6%
- *Anaerolineae SBR1031* up to 3%
- *SVA0485* group up to 9%
- '*Ca. Kapabacteriales*' up to 4%

AA acidic archaeal group

Extremely acidic conditions

Organic matter cycle is provided by Archaea

- Uncultured Archaea:*
- '*Ca. Marsarchaeales*' (1.6-42.5%)
 - '*Ca. Caldiarchaeales*' (1.5-25%)
 - *BSLdp215* (1.1-20.4%)
 - *A10* (or *ARK15*) (6.25%)



AB acidic bacterial group

Thermoacidiphiles of the sulfur cycle as a primary producers and organic matter degraders

Acidithiobacillus Hydrogenobaculum Desulfurella Mesoaciditoga Acidiphilium Thiimonas

