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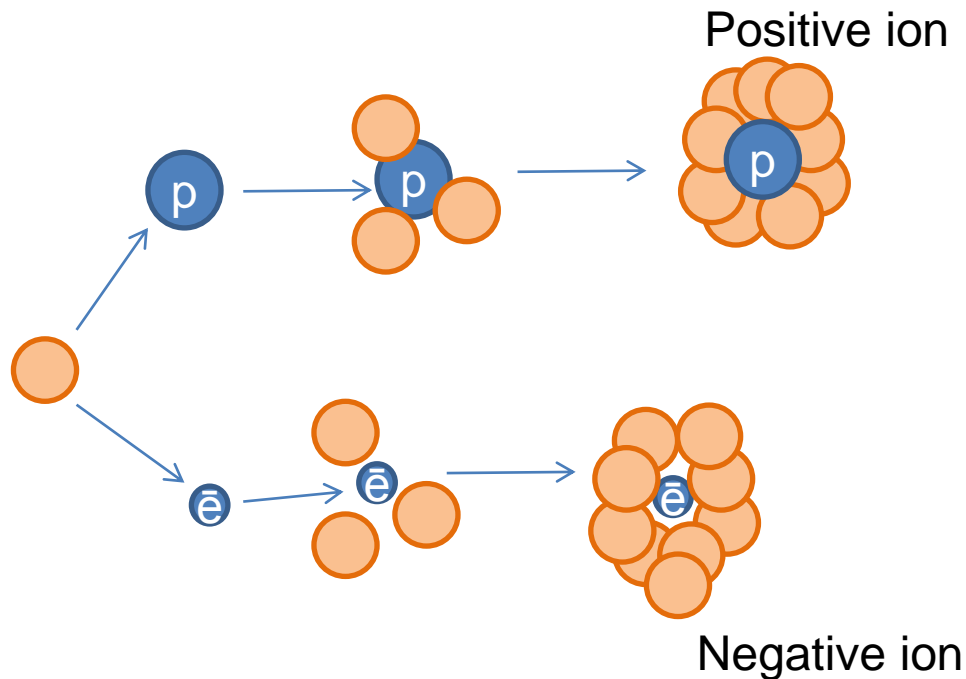
# Estimation of the balloelectric effect associated with breaking waves on the southwestern shore of Lake Baikal and a waterfall in the vicinity of the village of Arshan.

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# Airions



- ✓ Emanation of radioactive substances;
- ✓ Air quality;
- ✓ Weather conditions (humidity, temperature, cloud, rain, thunderstorm, fair weather);

Hirsikko, T.; Laakso, L.; Nieminen, S.; Gagn, S.; Lehtipalo, K. Atmospheric Ions and Nucleation: A Review of Observations. *Atmos. Chem. Phys.* 2011, 11, 767–798.

Smirnov V.V. Ionization in the troposphere. - SPb.: Gidrometeoizdat, 1992. – 309 c. (*in russian*)

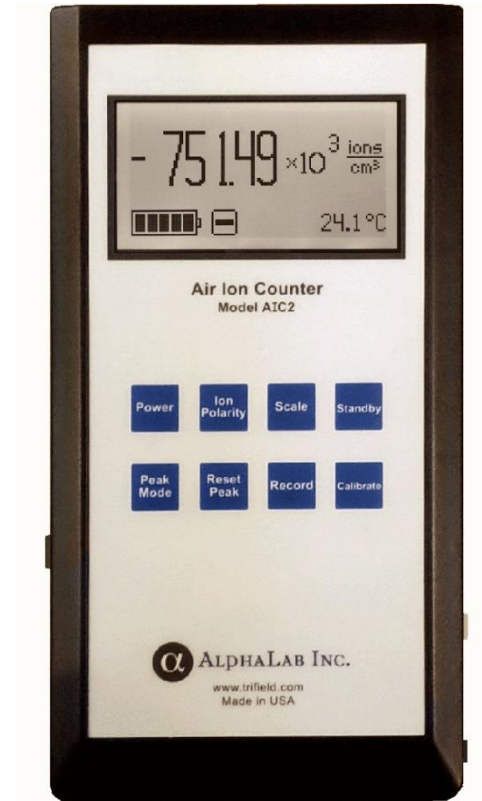
# The impact of negative air ions on human health

- Deep, persistent sleep;
- Reduced aggression and anxiety;
- Enhanced learning and memory;
- Regulated arterial blood pressure;
- Increased tolerance to pain;
- Improved brain function.



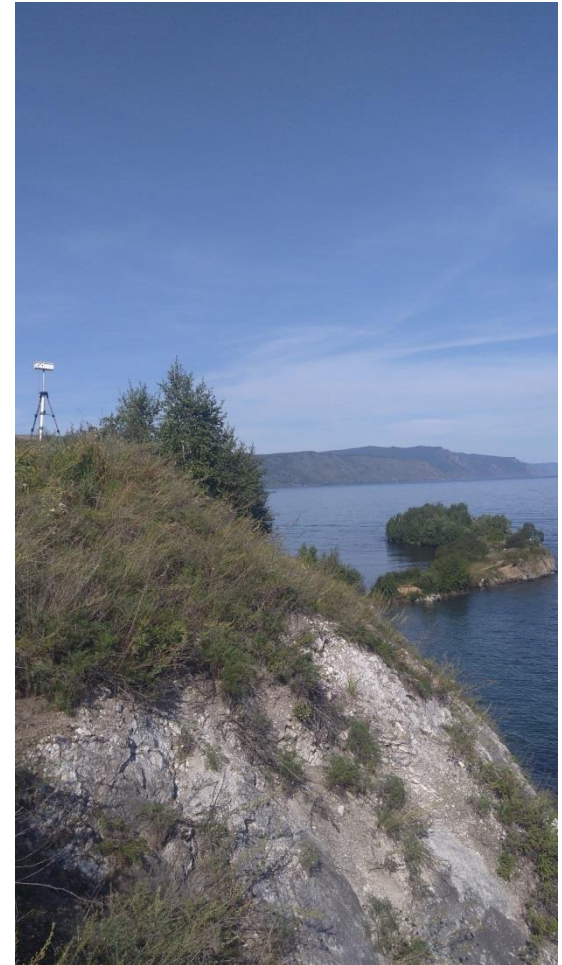
# Air ion counter

The Air Ion Counter Model AIC2 is a handheld meter designed to measure ion density. It measures this number separately for positive and negative ions. This instrument based on a Gerdien Tube Condenser design.



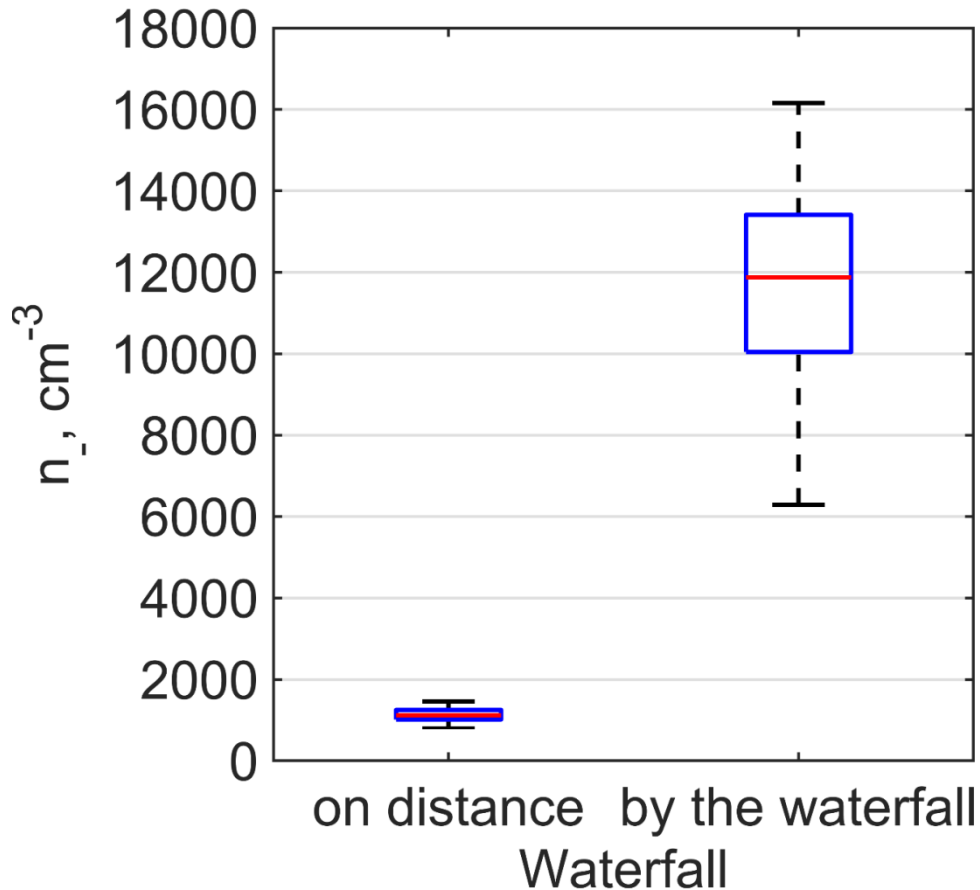
# Measurement technique

- ✓ Good weather conditions (no convective clouds, precipitation or fog, and wind speed  $< 6$  m/s)<sup>1</sup>;
- ✓ Relative humidity  $< 90\%$ ;
- ✓ Installation height of the device – 1 m above ground level;
- ✓ Measurement time – 10 minutes



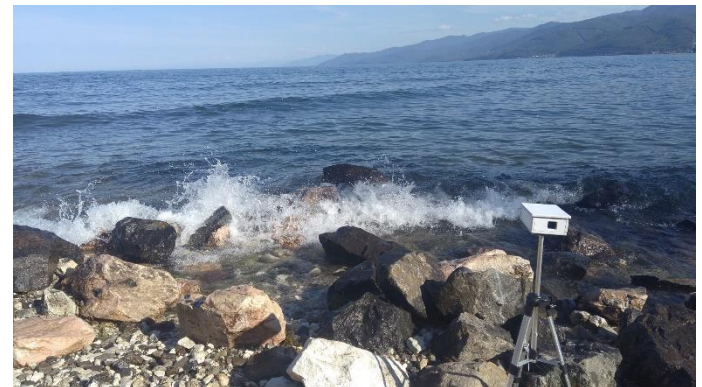
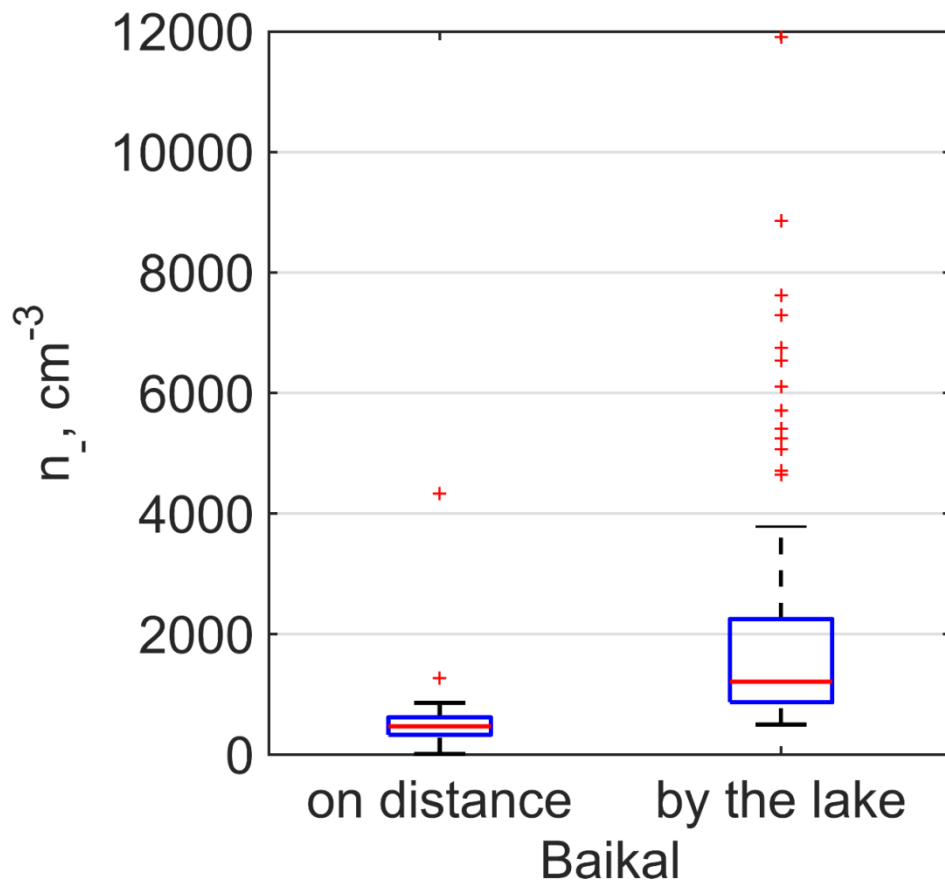
<sup>1</sup>Smirnov V.V. Ionization in the troposphere. - SPb .: Gidrometeoizdat, 1992. – 309 c. (*in russian*)

# High concentrations near the waterfall





# Balloelectric effect on the shore of Baikal



# Summary

The balloelectric effect near a large lake is not constant in time and depends on the nature of the waves

Near the waterfall, the balloelectric effect is quasi-stationary and causes high concentrations, which are many times higher than the background.

High values of the concentrations of negative air ions in the vicinity of waterfalls and large lakes have a beneficial effect on human health.

Balloelectric effect use of ionization can also enhance the health benefits of natural spas.



# Thanks for your attention!

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