

# STIMULATED RADIATION OF STRANGE NATURE FROM WATER MEDIUM EXCITED BY ELECTRICAL DISCHARGE

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This work is dedicated to research of discharge processes on the water-air boundary. Physical picture of electrical phenomenon development in such complex system as water-air attracts attention of many scientists [1-3] in the view of creation of adequate theoretical models and also for practical application of obtained results in forecast of processes taking place in atmosphere, above and under water.

Experimental model consists of two electrodes: cuprum ring with diameter 10 cm and second point electrode. They are separated by water layer placed in clear dielectric container. Second electrode is placed near water-air boundary. Its design allows us to place water drop, which is isolated from water medium. In the discharge moment the full energy of static field concentrates in this drop creating electrical discharge, which stimulates basic discharge process on the water-air boundary.

Discharge voltage of capacitor storage with capacity 500 mcF varies in the range 3-6 kV. Discharge energy maximum is 9 kJoules. In experiments we studied the value of discharge current and its variation in time. Video camera allows us register visible part of radiation spectrum (Fig. 1).



Fig. 1. The radiation and the plasmoid creation registered by digital photo camera.

Analysis of experimental results allow us make following conclusions:

- Distilled water, which has small conductivity (resistance is about 300-500 kOhm) such as dielectric, does not demonstrate both a creation of plasmas formation and a corpuscular radiation in electric discharge;
- An injection of small quantity of foreign bodies (acceptors and donors) creates needed conditions of optimal electric discharge. In our case we used Cl, Mg, Cu, S etc.
- In experiments we observed glow of whole water volume that can be explained as population inversion of electron, oscillation and rotation levels of water molecule as the result of their electrical pumping and following radiation;
- In experiments we obtained hard photons of electromagnetic radiation, which were registered as tracks on the photo paper placed in opaque envelopes.

## Summary

We have experimentally investigated the water properties under the influence of electric field in a wide energy range from 9 to 2 kJoules with voltages up to 6 kV. Both ionizing and electromagnetic radiation with hard photons have been detected. The discharge process ends by plasmoid blowout in atmosphere as ball lightning. It is shown that an insertion of micro quantity of impurities creates optimal conditions for discharge accompanied by both radiation and plasmoid blowout.

## REFERENCES:

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