

**ANSWERS TO COMMENTS ON THE MANUSCRIPT [24]
("ICE", BELARUSIAN AYPT TEAM)**

Answers to reviewer 1:

Q1. The time/wire diameter dependance consists of only 3 points. This data is definitely not enough to confirm the theory. The values of time/wire diameters of the figure 3 are not the same as in the table 1. It is not clear why the author didn't plot the additional points from the table 1.

A1. The data in the Table 1 are describing behavior of the copper wires, which does not correspond to our theory; that is why I've decided not to put plots of it, but just show on several points, what is wrong. I have expanded explanations on this matter in the revised article.

Q2. In the improved theory, when the author tried to account for heat exchange between a wire and environment, he estimated the temperature inside the wire ($T/2$) and the distance between the points with the air temperature and one with $T/2$ (y approx. equals to 3 cm). It would be really good to mention how the experiment was conducted.

A2. I have added explanations about these experiments.

Answers to reviewer 2:

Q1. What is the Regelation effect?

A1. Added explanations about regelation, as well as requested references.

Q2. While writing the equations for heat, what assumptions do you make about your system (is it closed, isolated, subject to energy dissipation? is the system placed in a refrigerator and is it important, etc.).

A2. Added requested information to the revised article.

Answers to reviewer 3:

Q1. I cannot agree that all the energy gained by freezing of the water will flow back down via the wire. Especially, if the wire does not have a good heat conductance (the first wires used), the theory will not work.

A1. Figure 3 of the revised article proves otherwise. And, even despite that, losses of heat are taken into account in the improved quantitative model.

Q2. The last equation seems be more meant as a joke – some of the parameters are not described, most of them are unknown.

A2. I have tried to describe and explain all parameters in the revised article.