

"Memory" effects of physical-chemistry properties of melt-water

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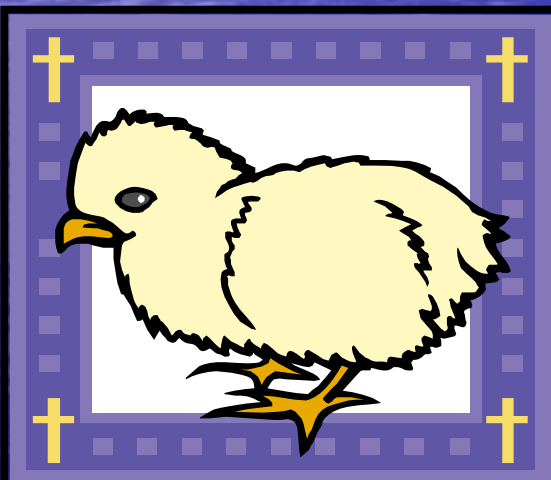
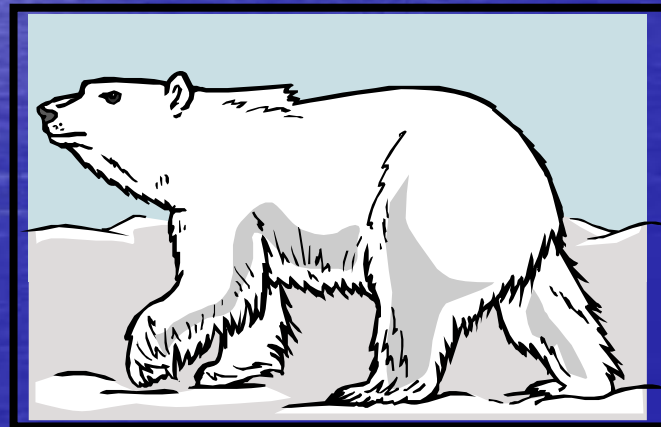
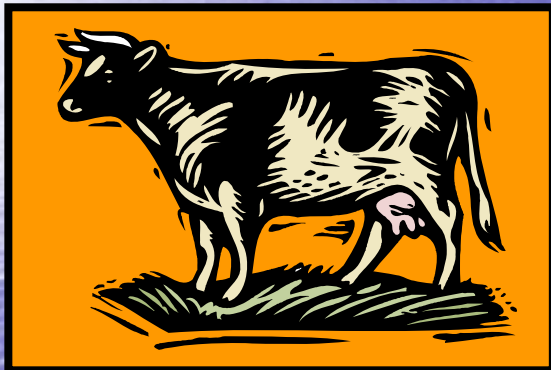
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**What denotes
phenomenon
«melt-water»?**



Water which turns out in result of ice melting the prepared by freezing approximately of 50 % of initial water is meant melt-water. Melt-water phenomenon we will name water, which application animals, stimulating impact on fruitfulness, makes on growth of plants (biology) and medical properties (medicine).



Modern situation

- ✚ In “world” is paradox situation: biologists are confident that this phenomenon exist. Doctors recommend to drink the melt-water and to do different ingallations.
- ✚ Production workers are doing the melt-water already. («Piligrim»).
- ✚ In the modern academic literature practically there are no the messages devoted to regular and detailed discussion of a phenomenon of melt-water from positions of physical chemistry. The majority of scientists, accepting for a phenomenon of melt-water change of its structure, are assured that the melt-water phenomenon is absent.

What is reliably established in difference of properties of the melt-water and not frozen water?

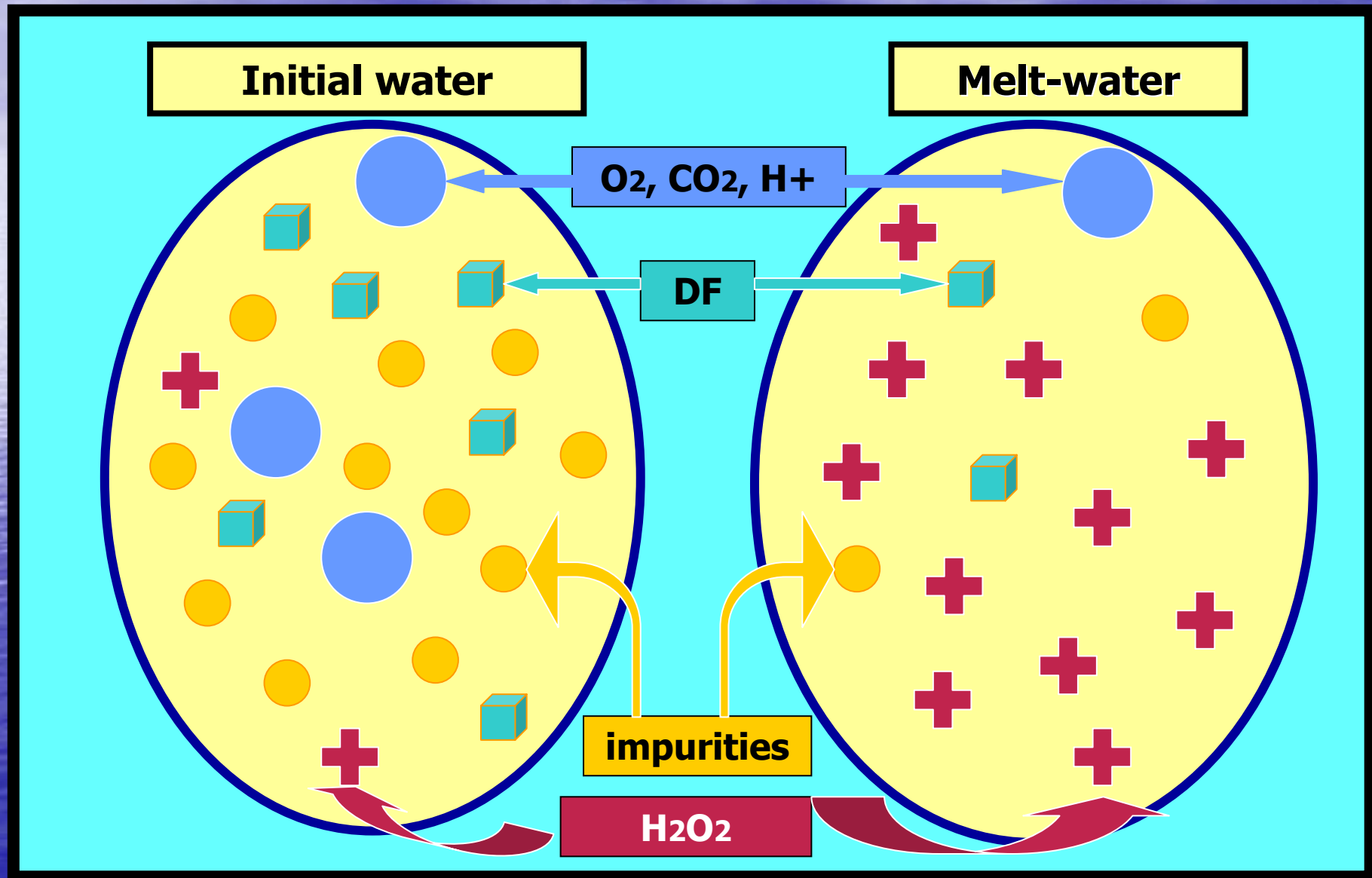


Reliably established distinction in physical-chemical properties of the melt-water and not frozen water.

- **Concentration of the dissolved gases.**
- **Concentration of disperse phase particles, organic and inorganic impurities.**
- **Concentration of water isotopes.**
- **Concentration of hydrogen peroxide.**



Real distinctions initial and melt-water



Time lives ("memory") of melt-water

- ✚ Параметр «время жизни талой воды» является одним из центральных в дискуссии между сторонниками и противниками существования феномена талой воды. Во всех сообщениях о талой воде неизменно обсуждается вопрос о времени, в течение которого она сохраняет свои не стандартные свойства, т.е. вопрос о её «памяти».
- ✚ **Сикорский Ю.А., Вертепная Г.И., Красильник М.Г. (1959) *Физические свойства талой воды. Изв. ВУЗов, Физика. 3, 12.*** Авторы измеряли величину диэлектрической проницаемости свежерастаявшей воды и нашли, что со временем её величина приближается к исходной. Авторы сделали заключение о времени жизни талой воды, которое составляло 750 секунд.
- ✚ **Хентов В.Я., Никитин В.Г., Васильева В.В., О.В.Власов. (1972) *О времени жизни двусторонних плёнок талой воды. Коллоид. Журнал. 43, 811-814.*** Авторы измеряли время жизни плёнок талой и исходной (контрольной) воды. Было установлено, что время жизни плёнки талой воды в несколько раз превышает время жизни контрольной. Этот эффект исчезал через 24 часа.

Main goal of report

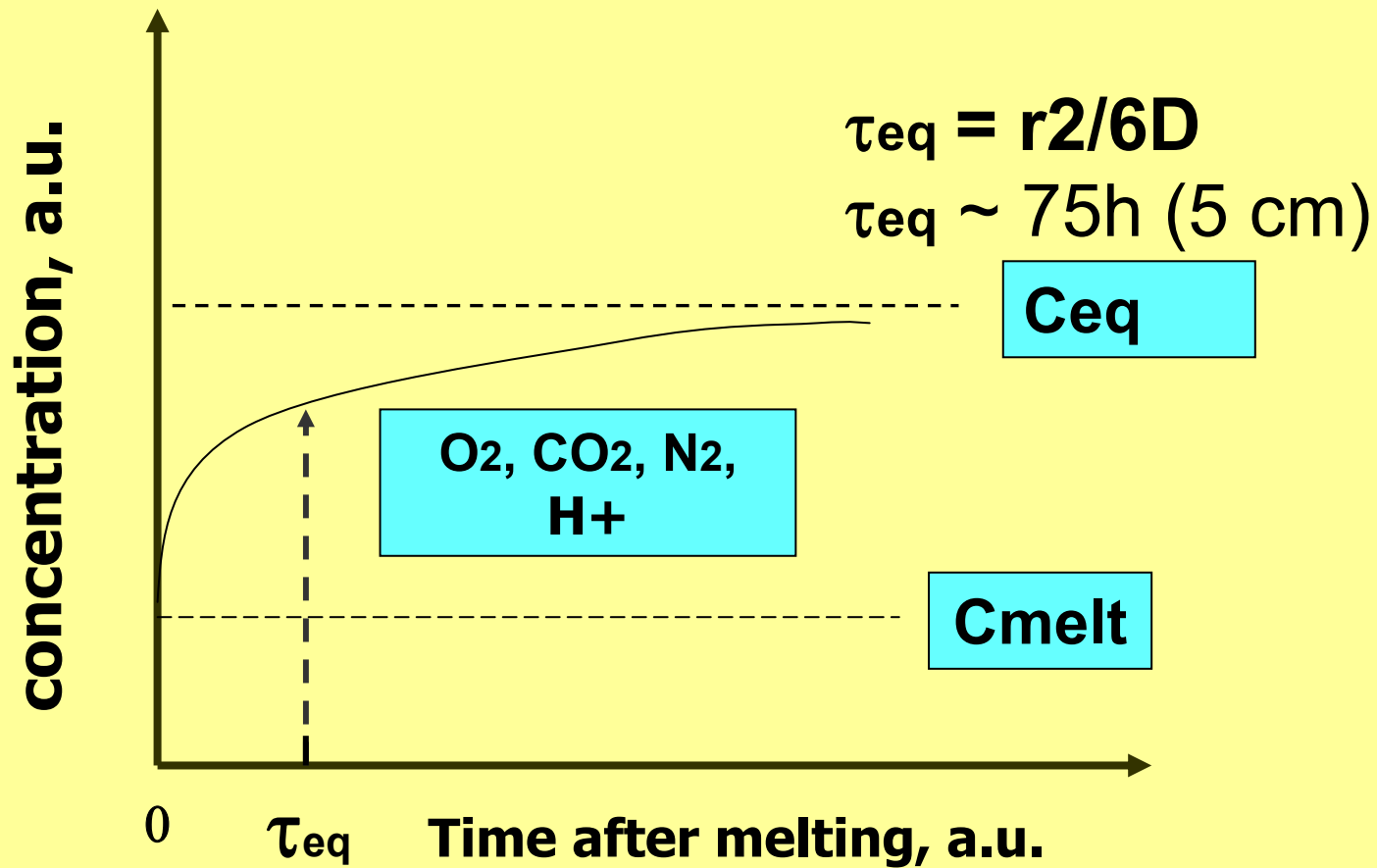
Discussion of effects of "memory" of known biologically significant physical and chemical properties of the melt-water.



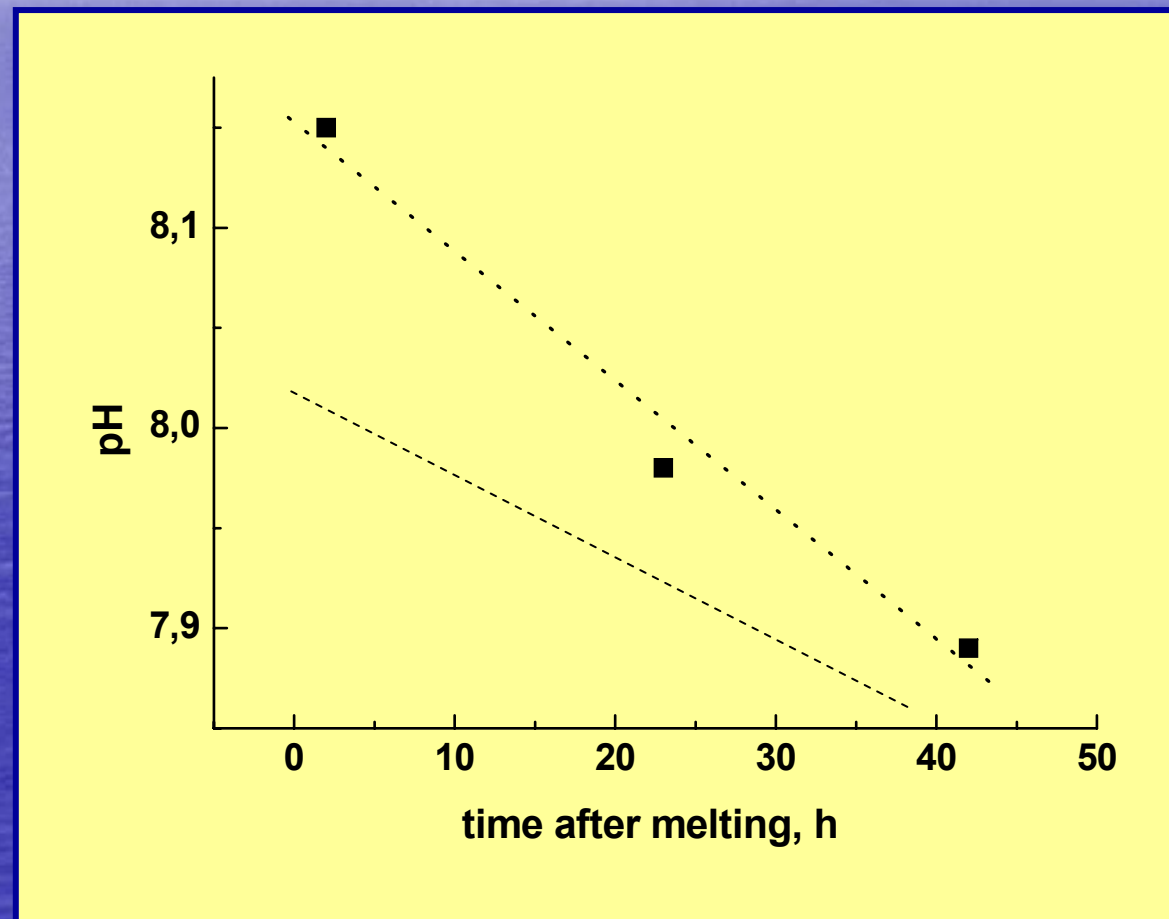
Gas "memory" of melt-water

- **Right after fusion of ice the water has concentration of gases less, than initial. It is not surprising, as solubility of gases in ice is much less, than in water.**
- **It is easy to see that occurrence within the limits of "a gas" hypothesis could be understood «memories of melt-water», having accepted this "memory" as time of a natural establishment of equilibrium concentration of various gases in water.**

Gas "memory" of melt-water



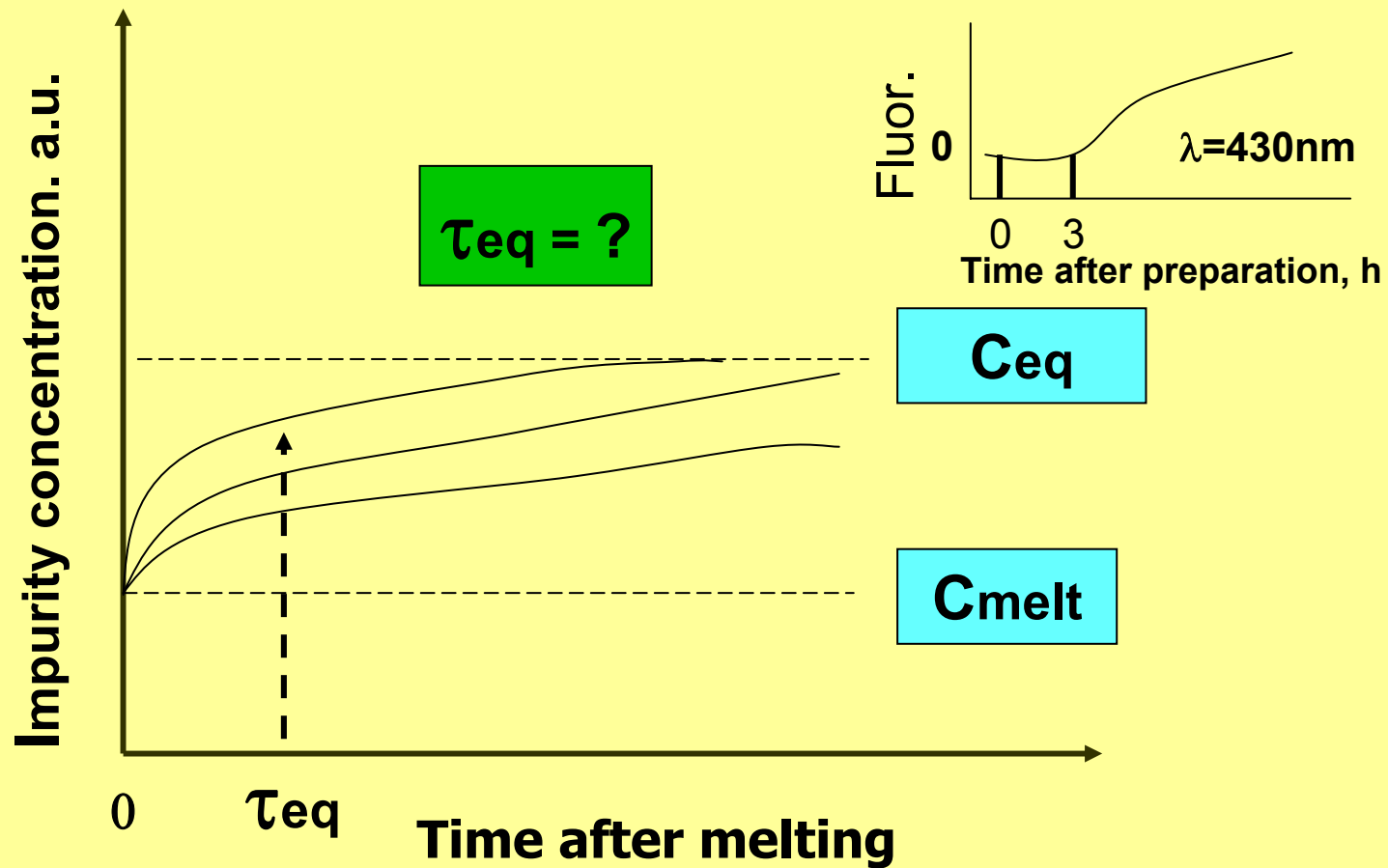
Time dependence of melt-water pH



The general resume in comparison of concentration of organic, inorganic impurities and particles of a disperse phase in initial and melt-water

- **Concentration of all types of impurity in melt-water concerning initial always is less. This reduction for each type of an impurity individually.**
- **At melt-water storage in open capacity there is a hit in it of all types of impurity and dissolution (direct fluorescent experiment) to the subsequent chemical reactions.**

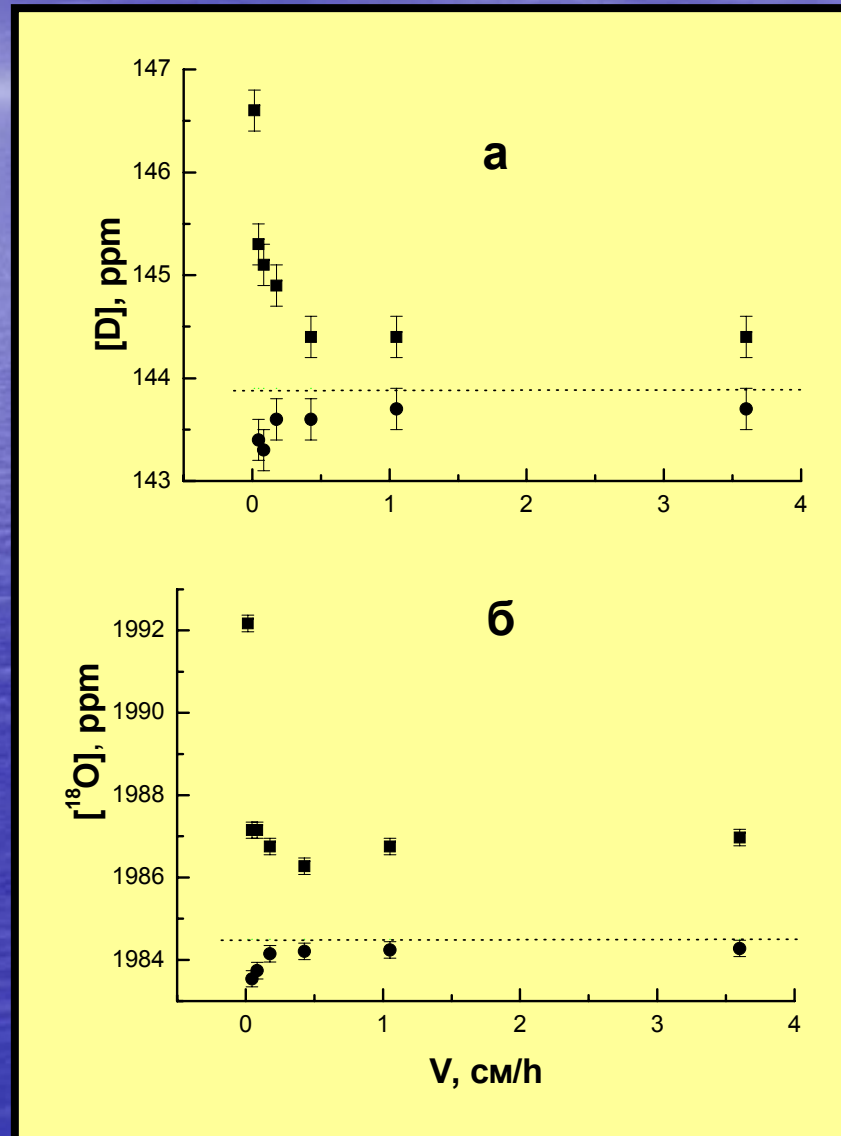
Impurity "memory" of melt-water



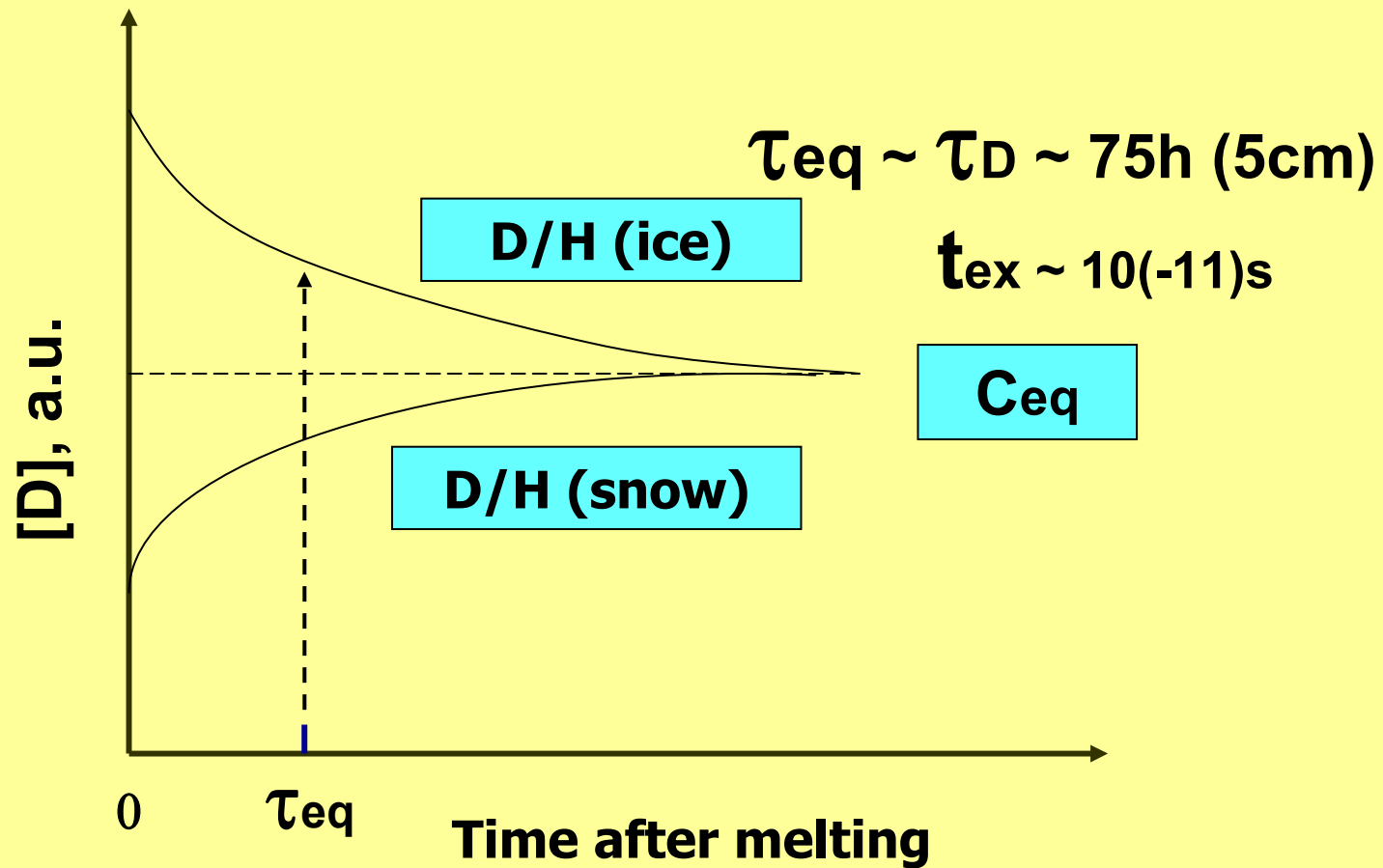
Heavy isotope “memory” of melt-water

- Temperature of freezing H₂O - 0°C, and D₂O – 3.98°C. At freezing there is a separation of isotopes. Thus ice is enriched by a heavy isotope. If then this ice to fuse, melt-water will contain more a heavy isotope than initial water.
- On the contrary, **snow melt-water** contains **less** a heavy isotope.
- At storage in open capacity the changed concentration of heavy water will aspire to the equilibrium

Separation dependence of hydrogen and oxygen isotopes on speed of water freezing at its recrystallization.

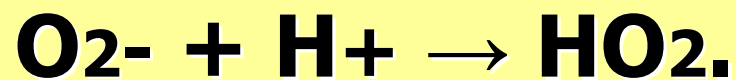
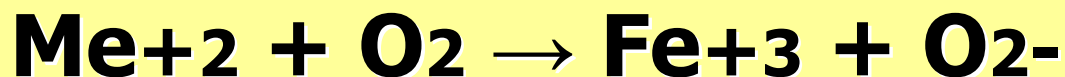


Isotope "memory" of melt-water



H₂O₂ !?

**Possible way of formation peroxide
in natural water:**



**What Hypotheses of H₂O₂ formation
are in melt-water??**

Change of peroxide concentration under freezing

Formation hypotheses H₂O₂ in thawed ice.

1. **Mehanohimichesky** formation



Basically to the similar assumption of the mechanism of formation OH of radicals in thawed snow it is possible to come if to take into consideration the data about energy which accompany **process destroying or formation of ice**. Energy value in these processes can make 1-10 кэВ. This energy is enough for bond rupture in a water molecule with formation OH radical.

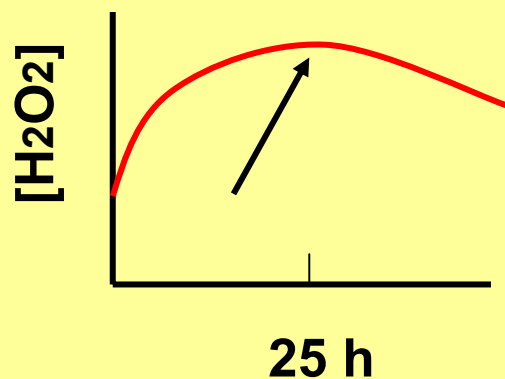
2. The **effect of Workman – Reynolds** can be other possible reason of occurrence OH radicals and the subsequent reactions. The essence of this effect consists that at ice formation on border water-ice is formed a potential difference which value reaches more than 100 v. This energy quite enough for water molecule ionization with the subsequent formation radicals OH.



Which then on reaction (2) form a molecule H₂O₂.

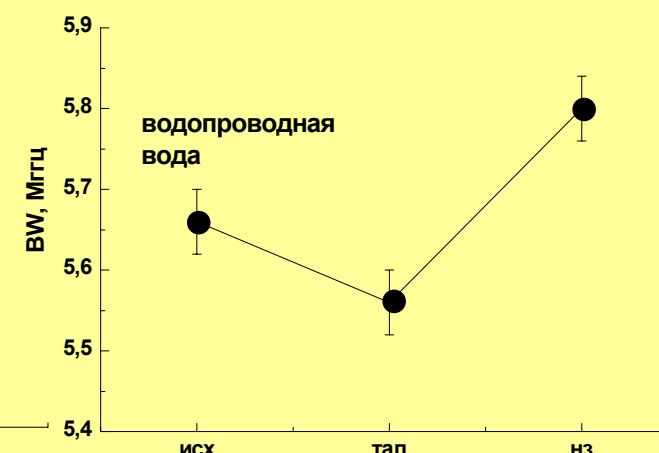
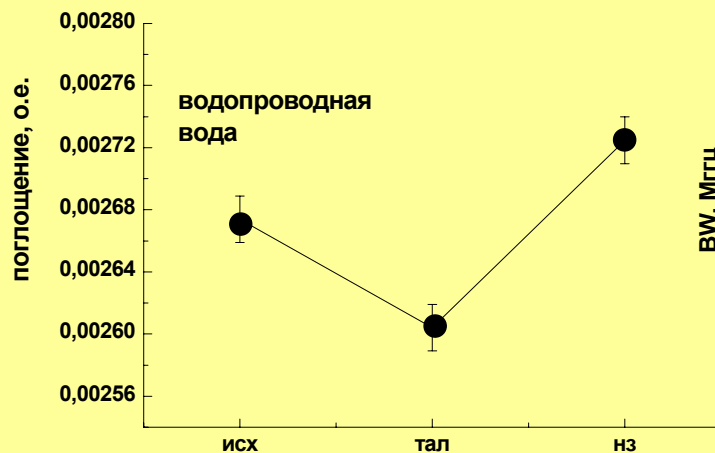
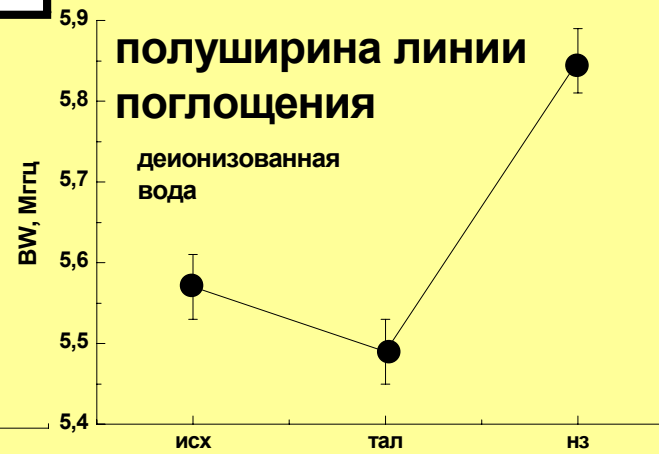
Interesting "time"-result

- Concentration studying H_2O_2 at distilled water freezing have shown that concentration H_2O_2 made $\sim(1\div 3)10^{-6}$ M (1995).

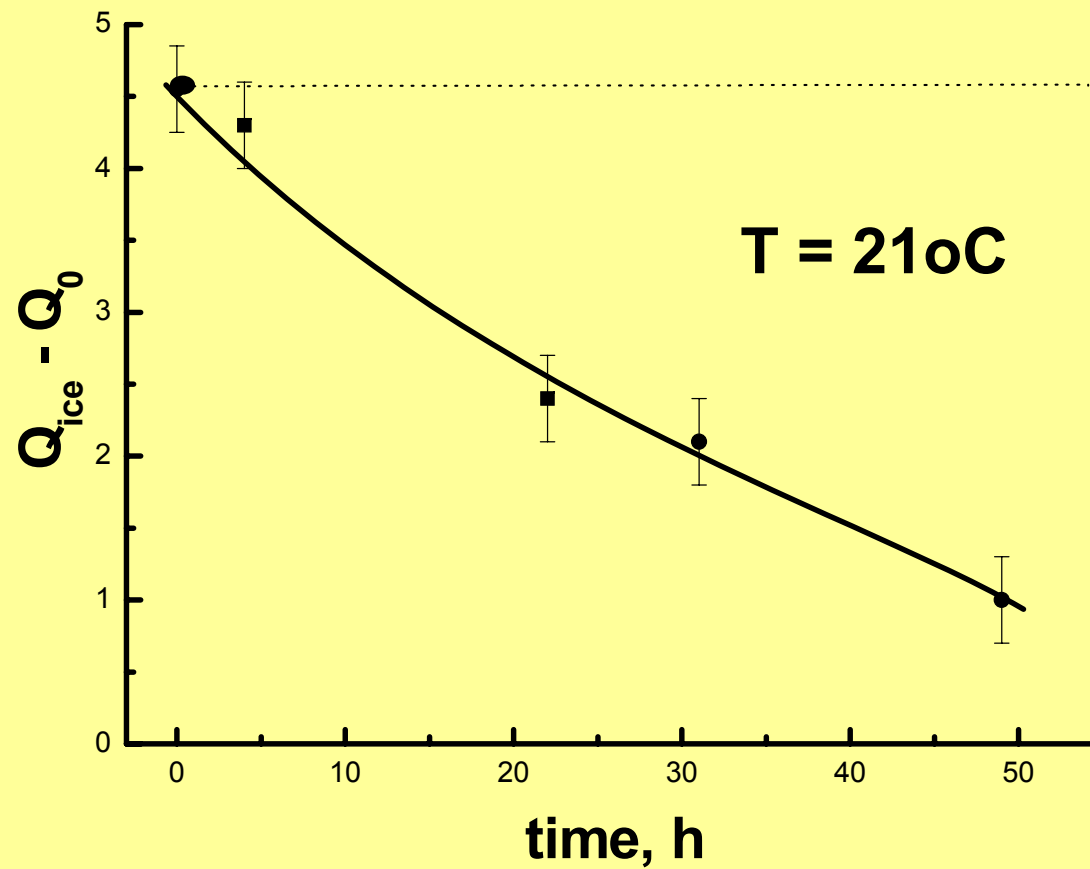


Dielectric permeability of melt-water

$f = 2.1344$ ГГц



"Memory" of dielectric permeability of melt-water



The resume.

All available academic data about "memory" of melt-water can be explain within the brackets of the standard physical and chemical representations.

Melted-water and Space

“Memory” of melt-water can be the important parameter for understanding of the mechanism of influence of Space on a Earth life.



**Thank you
for
attention !**

