Summary of the discussions:

Several topics were highlighted at the beginning of the workshop. Among them, the question of how remote sensing and lake modelling communities can interact in the near future, how to account for salinity in lake model FLake, how to setup a COST action for networking which is essential if we want to progress in lake modelling at global scale for NWP and other applications, and last but not least publication of results. Although other topics have been discussed (maybe less deeply) during the workshop, the following summary is devoted to the most important discussions and outcome.

The first question raised and that could help linking remote sensing (RS) and modelling groups is how to have a global extinction coefficient map for lake models? This is clearly an area where RS can help. The first guess would be to have a seasonal variation of this coefficient at the global scale. However, this would probably not be suitable for climate models, since seasonal variability of the extinction coefficient may not be representative of climate variability itself. RS can also help in ice coverage representation and more specifically to provide information when snow covers the ice (NWP purposes). Then another potential area where RS could provide inputs concerns inland waters salinity (see next section). Anyway the areas where RS can provide useful information to the modelling community is of course not limited but extinction coefficient seems to be a good starting point. An ESA-CCI Questionnaire can be filled: http://cci.esa.int/lakes for any requirement o lakes ECVs.

Then, a specific discussion took place to address the question of how to account for salinity in FLake. This question was raised a few years ago already. A simple approach (P Le Moigne) was first proposed to account for salinity, where its concentration would be constant and the impact on FLake thermodynamic variables would be considered: freezing point, specific heat, and water density (and maximum density) would be modified in presence of salt. One question to RS was how to map salinity of inland waters? The idea behind was to have a global mapping of lake's salinity to account for the impact of salinity on thermodynamic properties. Then D Mironov proposes a more integrated solution to account for salinity in FLake and have at the same time the influence of temperature and salinity on density and buoyancy. The idea was to start with the approach used in mixed layer ocean models and adapt it to FLake.

Networking was also discussed and the necessity to find a framework with a minimum of funding to allow people to meet and exchange on lake issues in general. The idea to propose a COST Action at the European level was proposed (as it was since the beginning). The content of the lake workshop was very helpful to start thinking of a COST Action proposal, to promote and help our common work on lakes.

Lot of subjects have been presented and discussed, and lot of papers will be proposed for publication. It was decided to proceed as for le last lake workshop and use EGU journal special issues facilities for publication, in GMD, HESS or The Cryosphere. Wim Thiery kindly proposed to organize the publication work (as he did 2 years ago) and already two guest editors were identified: Chenxi Mi and Claude Duguay. Probably another one would help.

Next meeting will take place in Italy in 2021 (location to be confirmed).

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