**REVIEW OF THE SCIENTIFIC SUPERVISOR OF THE FINAL GRADUATION WORK**

Topic of the final graduation work METHODS FOR PREDICTING HAZARDOUS HYDROLOGICAL PHENOMENA IN URBANIZED MOUNTAIN (ALPINE) COUNTRIES

Author (student) \_\_\_\_Grigoriy Kobzar\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Educational program Cold Regions Environmental Landscapes Integrated Science (CORELIS)

Level: Master's program

Scientific Supervisor Irina Fedorova, Dr., PhD\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Full name, academic title, academic degree)

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| Professional Requirements | Corresponds | Mostly correspond | Not correspond |
| to be able to correctly formulate and set tasks (problems) of their activities in the performance of work, analyze, diagnose the causes of problems, determine their relevance |  | + |  |
| establish priorities and methods for solving set tasks (problems); | + |  |  |
| to be able to use, process and analyze modern scientific, statistical, analytical information; |  | + |  |
| own modern methods of analyzing and interpreting the information received, to assess their capabilities in addressing the tasks (problems) |  | + |  |
| to be able to rationally plan the time of work’s performance, determine the correct sequence and volume of operations and decisions in the performance of the task; |  | + |  |
| be able to evaluate objectively the results of calculations and calculations; |  | + |  |
| to be able to analyze the results of data interpretation; |  | + |  |
| know and apply methods of system analysis; |  | + |  |
| be able to implement interdisciplinary research; | + |  |  |
| to be able to make independent substantiated and reliable conclusions from the work done |  | + |  |
| to be able to use scientific literature and a professional orientation | + |  |  |
| to be able to apply modern graphic, cartographic, computer and multimedia technologies in the study |  | + |  |
| to be able to use cartographic methods using GIS |  | + |  |

**Noted advantages of work**

Two hydrologicaly different regions – Alps and Australia – are compare for the first time in the Kobzar’ Master Thesis. Rivers in the first region (Alps) are under glacial and snowpaches impact. The rivers of the second region (Australia) are rain depended. Authors has gone this complicated task. Kobzar studies climate models and caries out of forecast comparison of extreme hydrological events in both overviewed regions. The innovation of the work is parallel of flood damage costs and their frequency in Alps. Recommendation for microclimate situation change can be taken into account for following study in future.

**Noted disadvantages of work**

Author have not done analyse of available hydrological information completely. There are no curve of 0,1%, 1%, and 5% probability that are useful for inundations forecast in hydrology. Statistic analyse of measured data has done incompletely in spite of new additional results that can be received.

**Supervisor's conclusion** Pastukhova V.A. during the writing of the master's thesis showed herself as a self-maintained researcher who can solve formulated problems independently. Grigorii is able to make integrated sciences and to analyse discrete data. Master Thesis can be accepted as a final qualification work and have a “good” mark.

Supervisor (Dr. I. Fedorova)

«\_\_11\_» \_\_\_\_June\_\_\_\_\_\_2018 year.