

Interactive comment on “Causes and systematics of inundations of the Krasnodar territory on the Russian Black Sea coast” by N. I. Alexeevsky et al.

N. I. Alexeevsky et al.

krylenko_i@mail.ru

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The authors very much appreciated your constructive comments and incorporated all of them into the revised paper. Partly: 1. Abstract, line 13: insert a “the” before Krasnodar Done 2. Abstract, line 16 : the verb is missing in this sentence We changed sentence a little: Assessments of seasonal and maximum flow of the Black Sea Coast Rivers for the period of hydrometric measurements describe regularities of change of the occurrence of inundations and their characteristics on the coastal terrain, within a year and on perennial time scale. 3. Introduction, first and second para: please provide evidence for the numbers given, e.g. references. We inserted references: According to numerous data on the floods in the river mouths and in the coastal zones of European part of Russia (from the 18-20th century until 2013), collected by N. I. Alekseevsky et al. (2013), materials of Taratunin (2000) and other sources 4.

Objectives: : :: please check the use of “km2” (same page 6, lines2 and 3) Yes, we changed -400 km2 5. Objectives: : :, line 14: please provide evidence for the number given, e.g. a reference We inserted references: Magritsky et al., 2013; Data of Federal State Statistics Service in Krasnodar region; Berlin and Petrov, 2015 6. Hydrological data: : :, line 22: replace “for days” by “diurnal”. This paragraph describes data which is not represented in Table 1. Could you please add this information to Table 1? Yes, we replaced “for days” by “diurnal” In the tables 1 and 2 runoff data (mean, seasonal, maximum) are presented. These data allow readers to get ideas about water regime, mean and maximum runoff, their statistical parameters. Data, which we used in the mentioned paragraph partly were used in the tables. Unfortunately, synthesis of other data in the form of similar tables, for example, of water levels, is impossible because of numerous violation of uniformity of observation rows due to destruction, transfer, closing of hydrological gauges. The data, which have not been inserted in tables 1 and 2, were attracted by authors for confirmation of cases of floods, for estimation of some characteristics of flooding zones and the rain floods causing them and etc. 7. Inundations: : :, line 16: what is meant by the term “mastered terrains” (same page 11, line 5)? Yes, we put “undeveloped terrains” instead “not mastered terrains” 8. Inundations: : :, line 19/20: should be “Alekseevsky and Magritsky (2013)” yes, done 9. Inundations: : :, page 10, lines 1 and 23: please explain the type 1 inundations a bit more, and take care to use the same wording (“Inundations of mixed type (No1): : :”versus “mixed type 1 inundations” since it makes the text more accessible when using similar expressions. Yes, we changed everywhere “inundations of mixed type (No1)” and added in according paragraph next explanation: Inundations of the mixed type (âĎŮ1) – river-flow and rainfall origin – are next by their occurrence. In general, purely rainfall inundations which also are frequent at the coast are caused by heavy rainfall over the developed areas and by the “inability” of the terrain to quickly absorb or drain rainwater into surface and underground water bodies. The magnitude of rainfall inundations increases if storm drains are functioning badly, therefore in the obvious and dangerous form they happen in settlements, and their frequency increases with

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the increase of the area of the urbanized terrains. That is why, they are also named urban inundations. In the basins of mountain and foothill rivers heavy rainfall, first, leads to a rapidly developing flooding by powerful overland streams formed by rainfall waters and by waters of "revived" temporary watercourses. Secondly, rainfalls induce high and fast-moving river floods, which are accompanied by river-flow inundations within the same settlements. The same cause and synchronization of these inundations, the difficulties in division zones of flooding by river and rainfall waters, and the corresponding damages, as well as lack of data, do not allow considering these events separately. They are named inundations of mixed type (No1) 10. Page 13, line 8: please provide a short explanation on the "western jet 2". We replaced "western jet 2" on the planetary frontal zone and added the explanation: Thirdly, activation of planetary frontal zone, the axis of which passes about 40 degree latitudes, leads to intensification of cyclogenesis over the Mediterranean. It is often observed in the autumn, when the active frontogenesis combined with high sea surface temperature. 11. Page 13, lines 19/20: Please check reference. Done: Rasmussen E.A., Turner J. Polar lows. Mesoscale Weather Systems in the polar region. // Cambridge Press., 2003 12. Page 15, lines 15-20: Please provide reference for the numbers given. Yes, we added: according to data, collected during field researches 13. Page 29, line 6: Please check the use of "cloud burst" We changed "cloud burst" onto "extreme rainfall" 14. Page 30, line 6: instead of "in danger" please use the more technical term "at risk" Yes, we changed Figures 15. All Maps (figures): please insert a North arrow and a measured grid (geographical coordinates). Done. We added a North arrow and a measured grid (geographical coordinates) 16. Figure 1 would benefit from an additional small overview map on the Black Sea with the surrounding countries Done, we added the additional small overview map on the Black Sea with the surrounding countries 17. Figure 3: what is meant by "line of height mark of the dangerous phenomenon" – needs clarification. We change names of the lines, and added description into legend: UP and DP height of water levels, the excess of which leads to unfavorable (UP) and dangerous (DP) consequences for the population and the

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economic activities 18. Figure 4: The legend is not logic to me; both points show “number of events (of) no more than 1-2” and “: :less than 3” – needs clarification. We changed the legend accordingly 19. Figure 5: The legend needs clarification; why the isobar in proximity to the river has higher numbers? Would it be possible just to use “1, 2 and 3 m above water level” or sth. similar? We clarified the legend – these isolines are water depths 20. Figure 6: What is meant by “social important objects”? – infrastructure? Residential housing? We made more detailed legend, which contains residential, industrial, resort areas separately 21. Figure 11: What does the small graph stand for? – needs explanation. We added explanation, that small graph is the lower part of the curve (zoom).

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2015-335/nhess-2015-335-AC1-supplement.zip>

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