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Comment

Interactive comment on “The possible negative consequences of underground dam and reservoir construction and operation in coastal karst areas: an example of the HEPP Ombla near Dubrovnik (Croatia)” by T. Roje-Bonacci and O. Bonacci

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Dear editor and reviewer, Thank you very much for your efforts in improving our paper. All comments as well as corrections are accepted (see blue bold letters). Answers on five questions are:

Page 1418, Row 11 Detailed explanation is given in the following paper: Bonacci, O.: Ground water behaviour in karst: example of the Ombla Spring (Croatia), J. Hydrol., 165, 113–134, 1995.

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Page 1419, Row 2 The following text is added in the manuscript: The calculation of the Mokošica area slope stability had been performed with GWL at an altitude of 100 m a.s.l. The expectation of landslide occurrence is based on comparison with the Vajont landslide (Paronuzzi and Bolla, 2012). Their geological settings are similar. Eocene flysch layers build the Mokošica low permeable slope, which spread over the limestone and dolomite. The flysch layers can be influenced by high uplift caused by fast GWL rising. The siltstone layers in the flysch are very soft rocks, and sensitive to water content. In combination with low effective stresses and changes of its water content they can lose its shear resistance.

Page 1420, Row 21 It is very well known from long lasting experience. In scientific literature I did not find any relevant paper. At all very few papers treat problem of injections.

Page 1423, Row 23 It is explained on page 1419 (row 2)

Page 1423, Row 29 Word pores is exchanged with karst fractures, fisures and joints

Thank you very much once more. Authors T. Roje-Bonacci and O. Bonacci

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/1/C312/2013/nhessd-1-C312-2013-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 1409, 2013.

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The possible negative consequences of underground dam and reservoir construction and operation in coastal karst areas: an example of the HEPP Ombla near Dubrovnik (Croatia)

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Abstract

The Ombla Spring represents a typical abundant coastal karst spring located in the vicinity of **the town of** Dubrovnik (Croatia). Its outlet is at an altitude of 2.5 m above sea level (m a.s.l.)

and the water from it immediately flows into the Adriatic Sea. The minimum and maximum measured discharges are $3.96 \text{ m}^3 \text{ s}^{-1}$ and $117 \text{ m}^3 \text{ s}^{-1}$, respectively. The Trebišnjica River traverses through its catchment. The mean annual discharge, after the canalization of over 60

km of its watercourse with spray concrete (in the time span 1981-2011), is $24.05 \text{ m}^3 \text{ s}^{-1}$

Before massive civil engineering work which took place during 1968-1980, the mean annual discharge was $28.25 \text{ m}^3 \text{ s}^{-1}$. There is a project for construction of the hydro electric power

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