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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Eco-environmentally friendly operational regulation: an effective strategy to diminish the TDG supersaturation of reservoirs" *by* J. Feng et al.

Anonymous Referee #1

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The paper presented an analysis of friendly operational regulation concerning the mitigation of the TDG supersaturation impact on fish in deep reservoirs. It suggested a promising approach to mitigate the conflict between dam spilling and fish protection. It was of importance in the eco-environmental protection in the development of hydropower cascades. This paper was well written and structured. The methodology and conclusions were solidly supported. Generally speaking the paper can be accepted after minor revision. 1. Many researches have been focused on dissolved oxygen in natural rivers and reservoirs. Is there any connection between the dissolved oxygen and the total dissolved gas? The paper should give some reference citations and ex-

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planations in the section of ‘Introduction’. 2. Dam spill usually occurs in summer. In Section 2, the paper introduced that there are many endemic fishes in the river. What growth period are the fishes in during the summer? Or what activities of the fishes will be influenced by the dam spill? I suggest a description of the fish growth should be given in the text. 3. Equation (5) is not clear. Please give the detained relationship between the density and temperature. The authors mentioned that “the ΦTDS and ΦISS are not incorporated in this simulation” (Line 8 in Page 7), thus ΦTDS and ΦISS should be removed from the equation and the context. 4. Equation (10) illustrated the mass transfer coefficient in terms of wind speed. What substance or gas was the research focused on? DO or TDG? Will it bring any significant difference to the simulated results of TDG? 5. The paper gave an in-depth analysis on the TDG variation in the reservoir under different regulation scenarios, but didn’t discuss the TDG variation to the downstream through the power flow and the spill discharge. This should be mentioned or recommended for further study. 6. Line 21 in Page 4: Insert "adjusting" before “the manner”. 7. Line 6 in Page 5: Insert "time" before “cost”. 8. Line 6 in Page 7: "the water surface" should be "the water surface elevation". 9. The first letters for the titles of longitudinal axes in Fig.4 should be capitalized.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 14355, 2013.

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