

## ***Interactive comment on “Speciation and dynamics of dissolved inorganic nitrogen export in the Danshui River, Taiwan” by T.-Y. Lee et al.***

**Anonymous Referee #3**

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This manuscript presents an interesting dataset and addresses a relevant topic well within the scope of the journal: the contribution of Oceanic River's to the oceanic nitrogen and the factors controlling these exports. The study concludes two main points:

- a) Danshui River exports much more DIN than previously thought by using global models.
- b) Controls of DIN export change along the watershed –relevant information which should be taken into account by models.

Although interesting, I think that the paper has two main weaknesses: first, lack of clarity in presenting and discussing the results probably because of limitations related to the language (i.e., there are several grammar and vocabulary errors that make under-

C1262

standing the message of the paper difficult). And secondly, I think that the paper would be greatly improved by a more in-depth discussion. For instance, how these results can be extrapolated to the rest of the Oceanic Rivers? Is the Danushi watershed a typical example of developed watersheds in Oceania? All of them having agricultural headwaters and downstream urban areas? What would be the implications of having the reverse distribution? Presenting four different methods of calculating fluxes you would expect a discussion in why the difference in results and which are the methods used in the models. . .

Specific and technical comments: P2499 L26 “well resources”? Do you mean “few”? P2504 L15 There is a dot lacking between “day” and “Yield” P2505 L20 Wet season lowest DIN than dry season except at D03 –why is this site different? P2507 L3-4 “Like in Dahan and Keelung River, DIN concentrations in the upstream sites were enhanced in wet season but were diluted in the downstream.” But in P2505 L19 referring to Dahan “mean DIN concentration in wet season was lower than in dry season except at D03” P2507 L10 Regression details? Type of regression, number of cases, p value and alpha? P2508 L10 “use” instead of “sue” P2508 L18 “show” or other instead of “demonstrate” P2508 L20 “whole” or other instead of “all” P2509 L25-26 Confusing sentence P2511 L22 “whole” or other instead of “all” P2511 L27 Replace “do downstream” for “to downstream” P2514 L16-18 “N fixation is stored within the watershed”, do you mean “N is retained in the watershed”? “For the upstream sites”, do you mean “The upstream sites”? These sentences are confusing. P2515 L14 “. . . the sites is” instead of “are” P2518 L3 “at given the”, do you mean “given the”? Table 1 and 2 It would be useful to include the distance from the estuary. Fig 3. What is the discontinuous line? Is it a significant regression?

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C1263