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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Scenario-based numerical modelling and the palaeo-historic record of tsunamis in Wallis and Futuna, Southwest Pacific" *by* G. Lamarche et al.

Anonymous Referee #1

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This paper uses numerical modeling to extrapolate the limited historical record and paleo-tsunami evidence for two island groups in the southwest of the Pacific Ocean, in order to characterise the tsunami hazard. This is a useful approach that should reduce any biases that can result from a limited tsunami record, which may over or under-estimate severe the frequency of damaging events. While this type of approach is not new or novel, the application to small isolated islands rather than more densely populated coastlines such as Japan or the USA is different. The results indicate the importance of fringing coral reefs for dissipating tsunami energy, Further, although tsunami amplitudes are generally small in the deep ocean, the interaction of the tsunami waves

with both individual islands and groups of islands in archipelagos can result in significant local amplification. The modelling indicates which specific areas of the affected islands are likely to experience a greater response, and therefore greater hazard. This should be a useful outcome for developing effective hazard mitigation strategies.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 2283, 2015.