

Interactive comment on “Wave energy dissipation in the mangrove vegetation off Mumbai, India” by Samiksha S. Volvaiker et al.

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The manuscript presents numerical study of wave attenuation by mangroves in a site in India and some field investigations to support wave modelling. The impacts of plant stem diameter, plant density and drag coefficient are discussed. The paper is well written in general. The abstract reflects the contents of the paper. Figures are reasonably clear and informative. My major concerns regarding the research presented in this paper are: 1. Wave conditions used for modelling are very mild and do not in any way represent the conditions during which wave attenuation will be important. Even though the authors mention that wave attenuation is important during tsunamis or high energy wave events such as tropical cycles, wave conditions used in this study do not reflect such conditions. Therefore, the significance of this study is questionable.

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2. Mangroves have a very complex root/branch system. The application of a very simple model to represent mangroves may have serious implications on the credibility of results. Those simple models are used in previous studies to represent plants like seagrass where the structure of the plant is relatively simple. 3. Storm surge during an extreme event can be very significant for determining water levels and wave propagation in mangrove forests. It is therefore, necessary to investigate high energy wave conditions with surge before concluding wave attenuation capacity of mangroves and the ability of the numerical model to capture such phenomena.

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