

## ***Interactive comment on “Beaching patterns of plastic debris along the Indian Ocean rim” by Mirjam van der Mheen et al.***

### **Anonymous Referee #1**

Received and published: 26 July 2020

Review of the manuscript "Beaching patterns of plastic debris along the Indian Ocean rim" by van der Mheen, van Sebille und Pattiaratchi

This manuscript is concerned with the fate of buoyant marine plastic debris entering the northern Indian Ocean from rivers due to advection by ocean currents and beaching. Due to the complicated and variable circulation patterns in the Indian Ocean which vary seasonally (monsoon) this is a complicated task.

The manuscript represents a substantial contribution to progress in the field and is very well suited for Ocean Science. Particle tracking in the Indian Ocean for such an extended period of time in the high-resolution model used gives insight into the pathways and connectivity of the whole region.

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The scientific quality is excellent, the approach and methods are very appropriate and the results are clearly presented and very well discussed in the context of existing literature.

An eye-opener for every oceanographer interested in the surface circulation of the Indian Ocean are the animated simulations for the 3 different beaching probabilities for a period of 10 years.

Obviously, there are many open questions regarding the influence of wave-current interaction, Stokes drift, beaching processes, but they are all recognized and adequately addressed in the manuscript as open questions.

Typos: line 76 + 77: change Wrytki to Wyrcki

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Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2020-50>, 2020.