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Ocean Science
Discussions

# *Interactive comment on* "Stochastic heterogeneity mapping around a Mediterranean salt lens" *by* G. G. Buffett et al.

**Anonymous Referee #3**

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The manuscript "Stochastic heterogeneity mapping around a Mediterranean salt lens" by Buffett et al., addresses an interesting topic within the scope of Ocean Science: the study of fine-scale thermohaline structure around an eddy of Mediterranean Water origin. The approach was to apply a stochastic method to water-column seismic reflectivity data and extract information about signal heterogeneity and lateral scales.

The paper is interesting, clearly presented and certainly deserves publication since it presents new data and a new method to study oceanic small-scale processes. I have only a general comment that the authors might consider when revising the manuscript.

Since the aim was to estimate internal wave scales, I'm nevertheless concerned that almost no effort was put into showing how the acoustic signal relates to the ocean density structure. Could the authors show some in situ validation, if and where available,



so as to build understanding about the reflectivity patterns seen in Figure 2? How well undulations of reflectors really match isopycnal displacements? The authors focus in detail three different regions around the eddy. Little is however said about the physical processes occurring in those areas and how they impact on the acoustic signal, what could definitely interest the oceanographic community.

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