Response to Referee #2

We thank the Reviewer's appreciation of the manuscript. The Referee's main suggestion for improvement was:

In the framework of the "Deep Ocean Exchange with the Shelf" issue, it would be interesting to detail in the introduction (for example in the paragraph lines 53-64) the overall implication of such interactions between undercurrents and surface flows and the off-shore propagation of eddies and filament formation on shelf-slope exchanges. Are such interactions sparse or frequent? What are the other places around the world ocean where interaction like those described in the paper are likely to occur?

There is a numerous amount of published works demonstrating the efficiency of eddy/dipole movement and filament formation in shelf–deep ocean mass (or tracers) exchange. The scope in our manuscript was to show that a particular deep undercurrent develops eddies strong enough to condition this exchange. But in general, this process should be present at other shelf/slope areas. Trying not to elongate further our Section 1, we thus followed the Referee's suggestion by simply including the following paragraph at the end of our Introduction:

"Evidence will be given for a clear interaction between the MW undercurrent and associated eddies and the surface circulation, which is mostly relevant for the across-slope exchange of physical and biogeochemical properties between the shelf and the deep-ocean. The interaction here presented, although being particular to the Iberian Atlantic coastal zone, where the MW undercurrent sheds energetic eddies, is certainly ubiquitous and should be present in all major World Ocean upwelling systems (degree of importance to be determined), in particular in those where deep undercurrents are present and prone to develop instabilities and generate eddies (for instance the California and the Benguela Current upwelling systems)."

All the specific Referee's suggestions concerning figure captions were taken into account in the revised version of the manuscript.