Reply to referee#3

We thank Anonymous Referee #3 for his/her useful comments, which improved our paper.
The changes referred to in our replies can be found in the attached file "Reviewed_text.pdf" uploaded as supplemental material.

GENERAL COMMENTS

Referee#3*: The paper by Schiavulli et al. attempts to discuss limitations of currently available band SAR acquisitions for marine applications. The paper must be understood as a review paper, since no new scientific results are presented. The text extensively deals with two effects that distort SAR images and consequently affect marine applications: (1) the presence of hydrometeors in rain cells that modify microwave radiation, and (2) the scalloping effect. Other potential environmental effects or system-inherent limitations are neither mentioned nor rated in terms of their potential impact on the usability of SAR images for marine applications. Moreover, the authors restrict themselves to give a summary of previous papers for the two effects they are discussing, making it virtually impossible to learn about the fundamentals of any of the methods suggested from the present text alone. Since, moreover, the paper almost exclusively discusses those two effects for the X-Band, which only a minority of currently operating satellites is using, I believe the presented material is to narrow in scope to justify the acceptance of this text as a review paper. I therefore recommend to reject the paper in its present form, but eventually to ask the authors to re-submit an extended version of their text that covers the limitations for marine applications from a more general point-of-view.*

Authors' reply: The first version of the manuscript was submitted on September, 27 2012 and the first review was received November, 29 2012. It was the only review received by authors up to February 22, 2013. The first reviewer asked to profoundly change the paper as a review of X-band SAR data marine applications. He also provided some guidelines that were followed by the authors that introduced, for instance for the polarimetric SAR mode, a review of most advanced techniques. As a result a primer on X-band SAR meant to marine users was written. Authors believe that the new version of the manuscript can be useful to such user community providing a first introductory text and all related references. Therefore authors feels that even this reviewer can agree that the new version of the manuscript can be considered for publication.