Nat. Hazards Earth Syst. Sci. Discuss.,
doi:10.5194/nhess-2016-109-RC1, 2016
© Author(s) 2016. CC-BY 3.0 License.

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Evaluation of the Search and Rescue Leeway model into the Tyrrhenian sea: a new point of view" *by* A. Di Maio et al.

Anonymous Referee #1

Received and published: 10 May 2016

General comments The work presented by the authors focuses on a crucial aspect of the search and rescue (SAR) operations, the assessment of the most probable search area by means of a stochastic model. The manuscript is well organized, with a clear description of the methods used; the results obtained may be useful for future applications. For this reasons I would recommend the acceptance of this contribution after some minor revisions and technical corrections. The reviewer also suggests publishing the manuscript after the revision of English language.

Specific comments The manuscript well describes the role of operational ocean forecasting system in the SAR operations (GODAE BLUElink used by the Australian Maritime Safety Authority and MFS for the Mediterranean Sea), and underlines that an efficient SAR planning requires high-quality environmental data with a particular emphasis on surface currents. Nevertheless, the authors never mention the use of real–time high-

Printer-friendly version

Discussion paper

resolution currents measured by coastal HF radar systems to backtrack drifting objects. For marine safety and SAR activities, the integration between HF radar currents and backdrift estimation technique is useful to locate the origin of a marine accident if a shipwreck appears in the sea or even in the search of the wreckage area in the case of an aircraft accident. I think the paper might read better after including this topic in the introduction paragraph (for references see O'Donnell et al., 2005; Abascal et al., 2012, Cianelli et al. 2015).

References: Abascal A.J., Castanedo S., Fernández V. and Medina R.: Backtracking drifting objects using surface currents from high-frequency (HF) radar technology, Ocean Dynamics 62:1073–1089, 2012.

Cianelli D., Iermano I., Mozzillo P., Uttieri M., Zambardino G., Buonocore B., Falco P., Zambianchi E.: Inshore/offshore water exchange in the Gulf of Naples, Journal of Marine Systems - 145, 37–52, 2015.

O'Donnell J, Ullman D, Spaulding M, Howlett E, Fake T, Hall P, Tatsu I, Edwards C, Anderson E, McClay T, Kohut J, Allen A, Lester S, Lewandowski M.: Integration of Coastal Ocean Dynamics Application Radar (CODAR) and Short-Term Prediction System (STPS) surface current estimates into the Search and Rescue Optimal Planning System (SAROPS). US Coast Guard Tech.Rep., DTCG39-00-D-R00008/HSCG32-04-J-100052, 2005.

How was the study area for dummy test experiment selected? The authors should clarify this point in the "Numerical Experiments" section.

In order to improve the paragraph "Results", the authors should comment the obtained outcomes in the frame of the surface dynamics features acting in the selected area at the time of the experiment.

Technical corrections

Page 1, line 6: "Thyrrenian"> "Tyrrhenian"

CC BY

Page 1, line 9: “Thyrrenian”> “Tyrrhenian”

Page 1, line 16-19: [Meteocean and environmental forecast are. . .. . the effectiveness of the search operation (Breivik et al., 2013).] rewrite the sentence after the revision of English language.

Page 2, line 16: [. . .regional operational oceanography systems following on from of the successful. . .] remove “on” and “of”.

Page 2, line 30-31:[. . .the operational oceanography service in Southern Italy and to integrate this service. . .] rewrite the sentence replacing “service” with a synonymous.

Page 2, line 33: “minister of the infrastructures and transport” > “Ministry of Infrastructures and Transport”. Page 3, line 12: ”fo”> “of”

Page 3, line 13: remove “executed”.

Page 3, line18-19: [. . .conservation of temperature, salinity and assumes. . .] rewrite as [. . .conservation of temperature and salinity, the model assumes. . ..]

Page 3, line 20: “ by and adaptation” remove “and”.

Page 3, line 30-32: [Surface momentum and buoyancy . . .. . provided by the European Centre for Medium Range. . .] rewrite the sentence after the revision of English language.

Page 4, line 10: “numerical models of measurements” rewrite as “numerical models”.

Page 6, line 4: “Thyrrenian”> “Tyrrhenian”

Page 6, line 22-23: [The first set of experiments . . .. and unknow status)] rewrite the sentence providing more detail about the estimation of the jibing value.

Page 8, line 1: “heteroshedasticity”> “heteroscedasticity”.

Page 8, line 13:” drag coefficients”> “drag coefficient”.

CC BY

Page 8, line 31: “bounday”> “boundary”.

Page 9, line 11-13: [We believe that . . . . . .and drag coefficients for specific targets.] rewrite the sentence after the revision of English language.

References

Page 10, line 6-7: “Bell, M., Schiller, A., Traon, P.-Y. L., Smith, N., Dombrowsky, E., and Wilmer-Becker, K.: GODAE: The Global Ocean Data Assimilation Experiment Forecasting, Oceanography, 22, 2009.”

Rewrite as

“Bell, M.J., Lefèbvre M., Le Traon P.-Y., Smith N.and K. Wilmer-Becker. GODAE: The Global Ocean Data Assimilation Experiment. Oceanography 22(3):14–21, 2009.

Page 10, line 8-9: “Bell, M., Tran, P.-Y. L., Lefebvre, M., Smith, N., and Wilmer-Becker., K.: An introduction to GODAE OceanView, Journal of Operational Oceanography, 8, 2–11, 2015.”

Rewrite as

“Bell M.J., Schiller A., Le Traon P.-Y., Smith N.R., Dombrowsky E. and K. Wilmer-Becker An introduction to GODAE OceanView, Journal of Operational Oceanography,8(1), 2-11, 2015.”

Page 10, line 12-13: “Brassington, G., Pugh, T., abd E. Schulz, C. S., Beggs, H., Schiller, A., and Oke, P.: BLUElink: Development of operational oceanography and servicing in Australia., Journal of Research and Practice in Information Technology, 39, 151–164, 2007.”

Rewrite as

“Brassington, G., Pugh, T., Spillman C., Schulz E., Beggs, H., Schiller, A., and Oke, P.: BLUElink: Development of operational oceanography and servicing in Australia.,

CC BY

Journal of Research and Practice in Information Technology, 39, 151–162, 2007."

Page 10, line 30: "Mellor, G.: An equation of state for numerical models of oceans and estuaries, J. Atmos. Oceanic Tech., 8, 8609–611, 1991."

Rewrite as

"Mellor, G.: An equation of state for numerical models of oceans and estuaries, J. Atmos. Oceanic Tech., 8, (4), 609-611, 1991."

Page 10, line 31: "Mellor, G. and Yamada, T.: Development of a turbulence closure model for geophysical fluid problems, Rev. Geophys. Space Phys, 20," delete "Space Phys"

Page 10, line 35-36: "Pinardi, N., Allen, I., Mey, P. D., Korres, G., Lascaratos, A., Traon, P. L., Maillard, C., Manzella, G., and Tziavos, C.: The Mediterranean ocean Forecasting System: first phase of implementation (1998-2001)., Annales Geophysicae, 21, 3–421, 2003"

Rewrite as

Pinardi, N., Allen, I., Demirov, E., De Mey, P., Korres, G., Lascaratos, A., Le Traon, P.-Y., Maillard, C., Manzella, G., and Tziavos, C.: The Mediterranean ocean Forecasting System: first phase of implementation (1998–2001), Annales Geophysicae 21, 3-20, 2003.

Page 10 line 37: check the reference "Richardson: Drifting in the wind, Applied Ocean Research, 15, 121–135, 1993."

Page 11, line 6: "insigh" > "insight".

Page 11, line 10-11: insert the paper volume and page numbers.

Figure 1 - Caption: define the red and green point on the right panel of the figure.

CC BY

2016.

CC BY