

Comment on egusphere-2022-27

Anonymous Referee #1

Referee comment on "The ocean fine spray" by Alfonso M. Gañán-Calvo, EGU sphere,
<https://doi.org/10.5194/egusphere-2022-27-RC1>, 2022

The paper "The ocean fine spray" by A. Ganán-Calvo discusses the production of sea spray aerosols at the sea surface. Specifically, the author focuses on the bubble-bursting mechanism, in which an air bubble entrained in the water rises to the surface, breaks, and expels aerosols into the atmosphere. It is thought that this process generates two types of droplets: sub-micrometer film droplets, and larger jet droplets. In his paper, the author argues that the size range of jet droplets may extend well into the sub-micrometer regime, and that their contribution to this fraction could be orders of magnitude larger than the total film contribution.

I found it difficult to review this paper, because I lack the in-depth knowledge of fluid mechanics required to challenge the author's line of thoughts or his calculations of streamlines etc. Having said this, I find the paper clear and convincing. The paper is well-organized, and the author properly introduces each step in his line of thoughts. The author also provides ample references (75), which allows the interested reader to verify all underlying work. I find the discussion of the data and the conclusions drawn from it convincing. The author pays attention to many details, such as the properties of the underlying literature data, or the sensitivity of the model he derives. In all, I find this a very good paper.

The paper is difficult to read because of its complexity, but I found the textual quality quite acceptable. I normally have a list of minor textual hiccups, but I did not find it necessary to do so in this case.

In summary, I recommend this paper for acceptance.