

Interactive comment on “The Determination of Surfactants at the Sea Surface” by Leon King et al.

Anonymous Referee #1

Received and published: 20 August 2019

Review of ms. The Determination of Surfactants at the Sea Surface by Leon King, leuan J. Roberts, Liselotte Tinel and Lucy J. Carpenter. King and coauthors measured surfactants in oceanic samples by ac voltammetry and by surface film pressure and done experiments with model SAS. I am sorry to tell that paper should be rejected due to few reasons: I learned nothing, majority of model experiments is already published in 1980ies. I am not sure if this paper intended to be methodological (if yes than nothing new came up) or ecological (too few data). Specific comments: Abstract Majority of the abstract is written as Introduction. L 16 - Method is calibrated and not SA 1 Introduction Introduction is too long. Huge part of it is book knowledge. Line 26/27 – I suggest replacing oceanic mixed layer with sea/ocean. Lines 26 and 28 – If it is stated that SML comprises the top 10-1000 μm than the viscous sublayer ($>1000 \mu\text{m}$) would not be within SML

2. Experimental Paragraph on Reagents should be added lines 174 – 179 – What was
C1

the volume of the SML sampled? lines 195 – 196 – The voltammeter does not consist of the electrodes. I suggest replacing this sentence with: The experiments were performed in a three-electrode system with an Ag/AgCl reference electrode containing 3M potassium chloride solution, platinum auxiliary electrode and a hanging mercury drop electrode (HMDE). Lines 196 – 197 – The voltammeter is NOT connected to a nitrogen gas cylinder. Electrochemical cell is connected to a nitrogen gas cylinder. The only one reason for the using nitrogen gas is to provide pressure for formation of mercury drop. I suggest removing this sentence. Lines 200 – 204 – The method for the measurement of SA is not described well and should be improved. If I understand properly they used method of the standard addition. As I am aware, this method is used by the O. Wurl group, and should be cited. However, this method is much more demanding than those published by Cosovic. Line 203 – vessel is not proper electrochemical word. It should be “the electrochemical cell” or “the cell” L 213 – to remove: (18.2 M Ω cm) L 215 – to remove: (18.2 M Ω cm) L 216 – to remove: (18.2 M Ω cm) L 220 – 239 – I really do not understand why the authors were interested in the determination of the TX-100 CMC? The CMC of TX100 is two order of magnitude higher than that one found in the real samples. 3. Results L 301 – EF is already explained at line 105 L 302 – γ_0 is already explained at line 72 L 310 - ???Only three unfiltered measurements. It is not unfiltered measurements but rather measurements of unfiltered samples

4. Conclusions L 340 – there is no method called SA voltammetry

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2019-87>, 2019.