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Interactive comment on “Technical Note: Remote sensing of sea surface salinity using the propagation of low-frequency navigation signals” by I. Astin and Y. Feng

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Overall I thought this was an interesting and novel use of Loran-C. One interesting aspect of this work for the Loran community is that typically the assumption has been that propagation over seawater is constant – after the PF and SF corrections are made the measured TOA should be constant over time. Additional Secondary Factors (ASFs) have been used to correct for surface conductivity differences over land but not over seawater, but it appears that there is some fluctuation in seawater conductivity which would impact the Loran propagation.

Some specific technical questions that I have are: Pg 2973 – I am not sure exactly what

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you are doing when you say you apply a 24h filter – please elaborate on this. Pg 2973 – most Loran receivers correct for PF prior to outputting the TOA measurement using a standard and constant PF correction – this would need to be removed prior to using the newly calculated PF based on actual atmospheric conditions – was this done (is not clear)? Similar comment regarding the secondary factor – a typical Loran receiver will also correct for the SF before outputting the TOA measurement using the standard SF correction – this would also need to be removed, again it is not clear if this was done or not. Another factor that needs to be considered is the Loran time of emission (TOE) – although the Loran signal is synchronized to UTC there is some variable offset from the nominal TOE – these offsets are usually recorded at the transmitter. These variances would need to be removed from the recorded TOA data as well. And finally, it is not clear how accurately the receiver can track TOAs - there is no information on the receiver performance or stability (all receivers have some amount of error).

Some Grammatical corrections: Pg 2972 Line 16: delete comma and insert “and the” before NASA Pg 2973 Line 7: spell out acronym GPS the first time used Pg 2974 – eta is not defined – please define

Interactive comment on Ocean Sci. Discuss., 11, 2971, 2014.

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