

**Original Article Title: “Low-profile inductive metasurface for surface wave excitation in L-band: design, manufacture and electromagnetic infrared measurements”**

**To:** AEM Editor

**Re:** Response to reviewers

Dear Editor,

Thank you for allowing a resubmission of our manuscript, with an opportunity to address the reviewers' comments.

We are uploading (a) our point-by-point response to the comments (below) (response to reviewers), (b) a clean updated manuscript without highlights (PDF main document).

Best regards,

André BARKA, Daniel PROST.

**Reviewer C:**

We thank the reviewers for these constructive remarks. Here we give answers and suggest improvements to the text.

The paper deals with the design of an ultra-thin inductive metasurface for surface-wave excitation. Simulations and measurements are performed on a proof-of-concept prototype in L-band. On the overall, I really appreciated the work. The paper is clearly written and well organized. I would recommend publication after addressing some minor comments:

1. Number last Figure as Figure 11 or incorporate it in Figure 10.

The last figure is now numbered Figure 11.

2. x, y, z axes should be added in Fig. 10 to understand clearly in which plane the EMIR field distribution is shown. I suppose the plane should be yz plane ! Please correct the axes in Figure 11 accordingly.

The EMIR pixels are defined in the xy plane. We have added the axis x and y on the figure 10; the axis are already indicated on the E field plot of Figure 11

3. In Fig. 4, ripples can be observed for monopole+SIS simulations and monopole measurements. Are you sure that there is not a mistake in the legend or color code. One would not expect so much ripples in the measurements of the monopole alone.

We agree there is a mistake on the colors. Figure 4 is now correct in the paper.

4. On page 3 just before Figure 4, please correct dBi to dB when talking about cross-polarization level.

The correction is done in the new paper.

5. In Fig. 6, I would recommend a 'h' step of 2 mm to enhance readability.

A h step of 2 mm is now consider in Figure 6 and Figure 7

6. In the paragraph just before the Conclusion section, correct III to 11 when talking about Figure numbers.

This correction is done in the new paper.

## Reviewer E:

We thank the reviewers for these constructive remarks. Here we give answers and suggest improvements to the text.

In this paper, authors describe a low profile inductive surface for High Frequency Surface Wave Radars(HFSWR). A compact thin 2D Super Inductive Surface (SIS) based on printed metal rings excited by an L-band monopole (1.1 GHz) is proposed to significantly increase (10 dB at the extremity of the SIS and 7 dB at one wavelength further) an electric field in TM polarization (electric field normal at the air/sea interface) required to excite a surface wave. The subject of the paper is interesting. However, here are some problems need to be addressed before accepted.

1. The English writing should be improved, there are some errors.  
English has been checked carefully in the revised paper.

2. It should be given some comment about how to design metastructure.

The design of the metasurface is fully described in section II through equations (1) to (5). No more material is provided in the new manuscript.

3. More details about simulation should be given, for example, what kind of boundary conditions, what kind of wave source.

Absorbing boundary conditions ("open add space") of CST are used to close the computational domain. Clarification is added in paragraph II.

The source is a quarter wavelength monopole antenna as already indicated in section II and shown on figure 2 and 10.

4. What about the dielectric properties of the designed metastructure.

As indicated and proved in section II, the dielectric properties of the designed meta surface is a strongly inductive surface and especially on figure 4 showing the positive behavior of the imaginary part of the equivalent surface impedance before the resonance. No more material is provided in the new manuscript.

5. For discussing the metasurface, in introduction section, the authors should reference other relative articles published earlier.

There is no very dense literature on surface wave launcher in HF band except the references [3,4,9,10] we have mentioned in the references of the paper.