



SDI Review Form 1.6

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_47041
Title of the Manuscript:	Aperture Maximization with Half-Wavelength Spacing, via a 2-Circle Concentric Array Geometry that is Uniform but Sparse
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>A)Equation (6): "is additive complex-valued spatio-temporal white Gaussian" – measured data usually are real, however, in some cases signal and phase is implied. There is need to justify as to why data are complex.</p> <p>B) There is need to provide a reference to the Nyquist theorem in introduction. Also, exact half-wavelength spacing is not enough, sensors need to be spaced at least at $\frac{1}{2}$ wavelength to extract spatial variation</p> <p>C) In general, when one utilizes effectively twice as many sensors, one can expect improvements (as long as the sensors are placed appropriately, in the sense of maximizing information content)</p>	<p>A) Yes, you are right. Measured data is usually real. However, we are using the more general complex-valued spatio-temporal white Gaussian noise because:</p> <ul style="list-style-type: none"> The array manifold is itself complex and hence the assumed observed data $\mathbf{x}(m)$ is complex-valued. The present authors thus find it reasonable to use complex additive noise. The noise has uniform power hence minimized disturbance <p>B) Thank you for this observation. The reference to the Nyquist theorem has been provided. On the part of the half-wavelength spacing, the Nyquist theorem is violated for the wavelength greater than half. The present study's focus is strictly on the half-wavelength spacing. Effects of wavelength greater than half include side lobes and grating lobes. Please refer to references [14], [25]-[28] as cited in our introduction.</p> <p>C) Yes, you are right. In our study, we considered the number of sensors on the UCA to equal the total number of sensors in the CUCA in order to compare the performance of the two geometries.</p>
Minor REVISION comments	Figure captions should be more descriptive. The summary should provide a reasonable presentation of the work. The summary is hard to read in its current form – it appears to be a discussion of a special case.	Thank you for this valuable suggestion. The captions for Figures 5 and 6 have been revised. The summary has also been improved by indicating what Case 1, Case 2, and Case 3 represent.
Optional/General comments	In Abstract: "Further, the authors demonstrate that the proposed sensor-array geometry has better estimation accuracy than a single ring array." This needs to be quantified – what does "better" mean and what does "estimation accuracy" mean in terms of numbers. I would also suggest to include a short section discussing a specific example of a measurement that uses the 2-ring array. Finally, comments should also include some sentences on Fourier analysis and deconvolution of data to be measured from the specific sensor array.	This conclusion is drawn based on comparison of the CRB expressions for both the UCA and the CUCA and the comparison based on the graphical work presented. Moreover, numerical case has been presented (See section IV-D) to show that the CUCA has lower CRB value than the UCA and hence better estimation accuracy.



PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	No ethical issues in the manuscript.