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| Book Name: | **Design and simulation of GHz antennas** |
| Manuscript Number: | **Ms\_BPR\_** **3848.4** |
| Title of the Manuscript:  | **To find Radar Cross section using AI and ML** |
| Type of the Article | **Book chapter** |

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| PART 1: Review Comments |
| Compulsory REVISION comments | Reviewer’s comment | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.** | The paper tries to study how objects reflect radar signals using simulations and connects these findings using MATLAB models. It talks about Complex Scattering Length and how polarization affects radar systems. The paper examines radar signal reflections from one-direction (monostatic) and multiple directions (bistatic) using software like CST Studio Suite and MATLAB. It includes mathematical models and discusses how to combine radar data with simulations. Even though the title indicates a focus on AI and ML, the paper doesn’t show much proof or examples of using these in radar analysis. The description of how simulations are set up lacks detail. Important information about how simulations are done is missing, like setup details, the choice of parameters, and comparing models with real data. It doesn’t clearly present or analyze the results from simulations, nor does it compare them with predictions or experimental data. Complex math and key ideas are not well explained for readers new to advanced radar concepts. * Think about how AI and ML could not only make RCS simulations more accurate but also discover new things in radar data that usual methods might miss. How could deep learning find patterns in the data that are not obvious?
* Look into adaptive radar systems that use AI to quickly change settings for better detection and tracking.

Clarifying Questions: * How do AI and ML specifically improve the simulation of RCS analysis?
* For large radar datasets, what methods are suggested for efficient processing and analysis using AI?
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| **Is the title of the article suitable?****(If not please suggest an alternative title)** | **Needs improvement**  |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | **Somewhat**  |  |
| **Are subsections and structure of the manuscript appropriate?** | **Perhaps**  |  |
| **Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.** | **Need revisions. The sound is partially.**  |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | **Needs to be revised and updated.** The references aren’t strong or relevant enough and should be improved. - <https://doi.org/10.1049/ote2.12111> - <https://doi.org/10.1016/j.optcom.2024.1305> - <https://doi.org/10.1109/ACCESS.2019.2924531>  |  |
| Minor REVISION commentsIs the language/English quality of the article suitable for scholarly communications? | Moderate revisions required.  |  |
| Optional/General comments |  |  |

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| **PART 2:**  |
|  | **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)* |
| **Are there ethical issues in this manuscript?**  | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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| **Reviewer Details:** |
| Name: | **Ebrahim E. Elsayed** |
| Department, University & Country | **Mansoura University, Egypt** |