

Dear Reviewer,

We would like to thank you for handling and reviewing our paper. These valuable reflections assisted us in improving our paper. The manuscript (Title: **Optimal Power Allocation for Channel-Based Physical Layer Authentication in Dual-Hop Wireless Networks**)) has been carefully revised according to your suggestions. We have studied your astute comments carefully and have made the corresponding corrections, which will hopefully meet your approval. The main revisions in the paper are as follows.

- 1) The overview of the state-of-art (related works) should be expanded with more details and additional research works.

Response: In section I, we added more details in the introduction. References [1] and [9] you provided and other references were cited to add details about 6G. In addition, we merged the statement about reference [8] and [9], and removed the statement about reference [10].

- 2) For completeness, it would be interesting to describe the impersonation process in the description of the system model (figure 1).

Response: In section II, we modified some of the text at the top of figure 1 following the authentication logic to make process in figure 1 easier to understand.

- 3) Some of the acronyms have not been defined (e.g., AF in figure 1 caption, OFDMA in line 73, etc.). The authors are kindly requested to recheck the definitions of all acronyms

Response: We made a further check on the abbreviations in the article.

- 4) The text below equation (2) should be revised as: 'The work in [14] obtains ...'.

Response: We changed the text below Formula 2 from '[14] obtains' to 'The work in [14] obtains ...'.

- 5) A table summarizing all notation and symbols used throughout the paper would assist the readers.

Response: Following your comment, we included the table at the end of the section I to explain all the symbols we used in the article.

- 6) More details on the link-level simulator can be added. For example, what software was utilized?

Response: We added details about the simulation in section VI. We declared the simulation software. In addition, we changed the parameters in the parameter table and explained the rationality of the parameters in the table.

- 7) In figures 2 and 3, what does the y-axis label (i.e., 'Pd') stands for?

Response: For reading convenience, we changed the y-axis 'Pd' to 'Detection Probability' in Figure 2 and 3.

- 8) A paragraph discussing future extensions and applications of this work can be added to the conclusion.

Response: Following your comment, we explained deficiencies in current work and future extensions of this work in section VII.

- 9) Most of the references included in this work are a bit dated, thus, more recent references can be added. The authors may want to consider the following references among others:

Response: As mentioned in 1, we added some recent references in section I.

Thank you again for your generosity with your precious time invested in improving the paper.

We sincerely hope you will be satisfied with the revised paper.

Sincerely
The Authors