Reply to Editor

Thank you very much for your precious time and valuable comments. The manuscript has been revised considering yours’ and respected reviewers comments. Below we detail our reflections, point-by-point.

Editor

1- The paper is unnecessarily big. Many of the parts are stated repeatedly. The authors need to pay special attention to the editing of the paper for it to have a nice readability.

Response

In the revised manuscript, we reduced the length of the manuscript (excluding appendices and bibliographies) from 39 to 33 pages. This has been done by moving some of the mathematical analysis to the appendix, bypassing straightforward derivations and avoiding redundancy. Furthermore, a more thorough proof reading of the paper has been conducted to enhance its readability.

Editor

2- Related works are limited and so are performance comparisons. Please pay special attention toward this.

Response

As per your request, we paid special attention in the revised manuscript to related works and performance comparison. In particular, more details about the techniques discussed in the introduction have been included in the revised paper. We also added a section containing most of the related techniques in the literature.

Furthermore, in addition to the Threshold Based Selection technique [33,34], we also compared the simulated outage performance of the proposed techniques to the Best Channel Selection (BCS) [15] technique and Threshold Best Channel Selection (TBCS) [16] with different interference power guarantee configurations.
Editor

3- Some of the math parts are repetitive. Please try to avoid the redundancies. Also for better readability, some of the math derivations can be put in the appendix.

Response

As stated in our reply to the first comment, to improve the readability of the paper, we reduced the length of the manuscript (excluding appendices and bibliographies) from 39 to 33 pages. This has been done by moving some of the mathematical analysis to the appendix, bypassing straightforward derivations and avoiding redundancy.
Reply to Reviewer 1

Thank you very much for your precious time and valuable comments. The manuscript has been revised considering yours' and respected reviewers comments. Below we detail our reflections, point-by-point.

Reviewer

This paper presents techniques for SUs selection and interference mitigation for CR networks. The presentation of this paper needs improvement. The paper is hard to read and understand with many grammatical mistakes and typos. There are few concerns listed:

Response

As per your request, a more thorough proof reading of the paper has been conducted to enhance its readability.

Reviewer

1. Limited discussion on related researches and motivations. No discussion on competence of the proposed work with state-of-the-art.

Response

As per your request, we paid special attention in the revised manuscript to related works and performance comparison. In particular, more details about the techniques discussed in the introduction have been included in the revised paper. We also added a section containing most of the related techniques in the literature.

Furthermore, in addition to the Threshold Based Selection technique [33,34], we also compared the simulated outage performance of the proposed techniques to the Best Channel Selection (BCS) [15] technique and Threshold Best Channel Selection (TBCS) [16] with different interference power guarantee configurations.

Reviewer

2. Section 1: More discussion and better organization is desirable.
Response

In the revised manuscript, more discussion has been added in Section 1. We also added a section containing most of the related techniques in the literature.

Reviewer

3. Section 2 - 6: Shrink those sections. Avoid the repetitive equations with minor changes. Do not mention general equations, go with citations only.

Response

To improve the readability of the paper, we shrank Sections 2 to 6 and reduced the length of the manuscript (excluding appendices and bibliographies) from 39 to 32 pages by moving some of the mathematical analysis to the appendix, bypassing straightforward derivations and avoiding redundancy.

Reviewer

Section 7: Proper analysis and remarks from the experimental results are missing.

Response

As per your request, we added more detailed analysis and remarks regarding the simulation results in Section 8.
Reply to Reviewer 2

Thank you very much for your precious time and valuable comments. The manuscript has been revised considering yours' and respected reviewers comments. Below we detail our reflections, point-by-point.

Reviewer

In the paper, the authors investigated OFDM based dynamic subcarrier selection schemes for secondary users in cognitive radio networks. They have proposed three techniques namely, Direct, Distributed and Incremental selection. The authors claimed to achieve better SINR with partial channel state information scenario. The paper provides an extensive mathematical model to analyze the outage probability for each of the models. The authors carried out an extensive simulation to understand the performance of the schemes. The distributed scheme provides better fairness regarding providing equal opportunity to all SUs.

1- The current introduction is not sufficient. I think the authors should describe each system in a bit more details along with the challenges.

Response

As per your request, we paid special attention in the revised manuscript to related works and performance comparison. In particular, more details about the techniques discussed in the introduction have been included in the revised paper. We also added a section containing most of the related techniques in the literature.

Furthermore, in addition to the Threshold Based Selection technique [33,34], we also compared the simulated outage performance of the proposed techniques to the Best Channel Selection (BCS) [15] technique and Threshold Best Channel Selection (TBCS) [16] with different interference power guarantee configurations.

Reviewer

2- I would suggest the authors put more mathematics in the Appendix portion, reducing the math in the theory part. This will enhance the readability of the paper.

Response
To improve the readability of the paper, we reduced the length of the manuscript (excluding appendices and bibliographies) from 39 to 32 pages by moving some of the mathematical analysis to the appendix, bypassing straightforward derivations and avoiding redundancy.

**Reviewer**

3- Since this protocol is a distributed method, I would suggest to carry out a simulation in some well-defined network simulation tool such as ns3.

**Response**

Network Simulator 3 (Ns3) simulation tool is generally used to evaluate the performance of networking and upper layers techniques and algorithms while our proposed techniques enhance the performance of the physical layer (PHY) algorithms. Also, to be able to compare with existent techniques in the literature and for results conformity, we used the same simulation tool which is Matlab©. In particular, Matlab© is widely used by PHY researchers to evaluate the performance of secondary users allocation schemes [14-21] and interference mitigation techniques [22-25].