

**Dear reviewer RC3:**

Thank you very much for the insightful comments. Thank you for giving us a choice to correct the shortcoming of our manuscript. We already carefully read your comments and revised the manuscript according to your suggestions. We hope that this revision will make our manuscript meet the publisher. The responses to the comments point by point are listed below. Please feel free to contact us with any questions. If the revised manuscript maybe exists the shortcomings, please tell us. We will try our best to continue to revise our manuscript in order to improve our manuscript. Really thank your insightful comments and help again!

Yours sincerely,

Regards,

Xiangbing Zhou

**Reviewer #1:**

In this paper, local binary pattern (LBP), sparse representation and mixed logistic regression model are introduced, and a sample labeling method based on neighborhood information and priority classifier discrimination is presented. The research work reported is interesting in the community. Some suggestions are listed below to improve the manuscript's quality:

1. The manuscript's motivations should be further highlighted in the manuscript, e.g., what problems did the previous works exist? How to solve these problems? Please explain that.
2. The authors must clearly explain the difference(s) between the proposed method and similar works in the introduction.
3. The authors should further highlight the manuscript's innovations and contributions.
4. Could you tell me the limitations of the proposed method? Please add this part to the manuscript.
5. There are a few typos and grammar errors in the manuscript. Please polish the manuscript carefully.

**COMMENT 1:** The manuscript's motivations should be further highlighted in the manuscript, e.g., what problems did the previous works exist? How to solve these problems? Please explain that.

**RESPONSE:** Thank you very much for the insightful comments. According to expert advice, we have substantially modified our manuscript in order to further highlight the manuscript's motivations in the manuscript. In this study, the hyperspectral images contain rich spectral and spatial information of earth surface features, which increases the difficulty of data processing and analysis. In addition, the training samples of actual hyperspectral images are small and there is a problem of sample labeling. It will be very difficult to solve these by using the previous methods. In this paper, local binary pattern (LBP), sparse representation and mixed logistic regression model are introduced to propose a sample labeling method based on neighborhood information and priority classifier discrimination. Then, a hyperspectral remote sensing image classification method based on texture features and semi-supervised learning is implemented to solve these problems. The LBP is employed to extract features of spatial texture information from remote sensing images and enrich the feature information of samples. The multivariate logistic regression model is used to select the unlabeled samples with the largest amount of information,

and the unlabeled samples with neighborhood information and priority classifier tags are selected to obtain the pseudo-labeled samples after learning. Please read our revised manuscript, thanks!

**COMMENT 2:** The authors must clearly explain the difference(s) between the proposed method and similar works in the introduction.

**RESPONSE:** Thank you very much for the insightful comments. According to expert advice, we have substantially modified our manuscript in order to clearly explain the difference(s) between the proposed method and similar works in the introduction. Please read our revised manuscript, thanks!

*To sum up, hyperspectral images contain rich spectral and spatial information of earth surface features, which increases the difficulty of data processing and analysis. In addition, the training samples of actual hyperspectral images are small and there is a problem of sample labeling. The local binary pattern, sparse representation and mixed logistic regression model are used in this paper. A new hyperspectral image feature extraction method based on local binary pattern is proposed to obtain texture features of hyperspectral image samples and enrich hyperspectral image sample information. A sample selection strategy based on active learning is designed to determine the unlabeled samples. Based on this, a new sample labeling method based on neighbourhood information and priority classifier discrimination is deeply studied to expand the training samples. The hyperspectral remote sensing image classification method based on texture features and semi-supervised learning is studied to improve the classification accuracy of remote sensing images.*

*The main contributions of this paper are described as follows.*

*1) A novel a hyperspectral remote sensing image classification method based on texture features and semi-supervised learning is proposed, which introduces local binary pattern, sparse representation, hybrid logistic regression model and so on.*

*2) The local binary pattern is used to effectively extract the features of spatial texture information of remote sensing images and enrich the feature information of samples.*

*3) A multiple logistic regression model was used to optimally select unlabeled samples, which are labeled by using neighbourhood information and priority classifier discrimination to achieve pseudo-labeling of unlabeled samples.*

*4) A hyperspectral remote sensing image classification model based on semi-supervised learning is constructed to effectively achieve accurate classification of hyperspectral images by making full use of the advantages of sparse representation and mixed logistic regression model.*

**COMMENT 3:** The authors should further highlight the manuscript's innovations and contributions.

**RESPONSE:** Thank you very much for the insightful comments. According to expert advice, we have substantially modified our manuscript in order to further highlight the manuscript's innovations and contributions.. Please read our revised manuscript, thanks!

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4) *A hyperspectral remote sensing image classification model based on semi-supervised learning is constructed to effectively achieve accurate classification of hyperspectral images by making full use of the advantages of sparse representation and mixed logistic regression model.*

**COMMENT 4:** Could you tell me the limitations of the proposed method? Please add this part to the manuscript.

**RESPONSE:** Thank you very much for the insightful comments. According to expert advice, we have substantially modified our manuscript in order to the limitations of the proposed method. In this study, the proposed classification method has the more computing time, so the next step should be more in-depth research to reduce the time complexity. Please read our revised manuscript, thanks!

**COMMENT 5:** There are a few typos and grammar errors in the manuscript. Please polish the manuscript carefully.

**RESPONSE:** Thank you very much for the insightful comments. According to expert advice, we have substantially modified our manuscript in order to eliminate a number of grammatical errors and spelling errors. In addition, we have invited an English teacher whose native language is English to check the manuscript carefully in order to improve the written English level and avoid solecism and spelling mistakes. Let the revised manuscript be more readable. Please read our revised manuscript, thanks!

**And so on, please read our revised manuscript. We thank the comments and the opportunity for us to improve our manuscript. As much as possible, the questions were taken into account during the preparation of the revised manuscript. We hope that the manuscript is now suitable for publication.**