# [***Researchers from Dalian Polytechnic University Detail Findings in Information Technology (Performance Evaluation of Mangrove Species Classification Based on Multi-Source Remote Sensing Data Using Extremely Randomized Trees in Fucheng Town, ...)***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:67W5-Y6T1-JBSP-11BP-00000-00&context=1516831)

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**Body**

2023 MAR 27 (NewsRx) -- By a News Reporter-Staff News Editor at Information Technology Daily -- Investigators publish new report on information technology. According to news reporting out of Dalian, People's Republic of China, by NewsRx editors, research stated, "***Mangroves*** are an important source of ***blue carbon*** that grow in coastal areas. The study of ***mangrove*** species distribution is the basis of carbon storage research."

Financial supporters for this research include National Natural Science Foundation of China; National Key Research And Development Program of China; National High Resolution Special Research.

Our news editors obtained a quote from the research from Dalian Polytechnic University: "In this study, we explored the potential of combining optical (Gaofen-1, Sentinel-2, and Landsat-9) and fully polarized synthetic aperture radar data from different periods (Gaofen-3) to distinguish ***mangrove*** species in the Fucheng town of Leizhou, Guangdong Province. The Gaofen-1 data were fused with Sentinel-2 and Landsat-9 satellite data, respectively. The new data after fusion had both high spatial and spectral resolution. The backscattering coefficient and polarization decomposition parameters of the fully polarized SAR data which could characterize the canopy structure of ***mangroves*** were extracted. Ten different feature combinations were designed by combining the two types of data. The extremely randomized trees algorithm (ERT) was used to classify the species, and the optimal feature subset was selected by the feature selection algorithm on the basis of the ERT, and the importance of the features was sorted. Studies show the following: (1) When controlling a single variable, the higher the spatial resolution of the multi-spectral data, the higher the interspecific classification accuracy. (2) The coupled Sentinel-2 and Landsat-9 data with a 2 m resolution will have higher classification accuracy than a single data source. (3) The selected feature subset contains all types of features in the optical data and the polarization decomposition features of the SAR data from different periods: multi-spectral band > texture feature > polarization decomposition parameter > vegetation index. Among the optimized feature combinations, the classification accuracy of ***mangrove*** species was the highest, the overall classification accuracy was 90.13%, and Kappa was 0.84, indicating that multi-source and SAR data from different periods coupling could improve the discrimination of ***mangrove*** species."

According to the news editors, the research concluded: "(4) The ERT classification algorithm is suitable for the study of ***mangrove*** species classification, and the classification accuracy of extremely random trees in this paper is higher than that of random forest (RF), K-nearest neighbor (KNN), and Bayesian (Bayes). The results can provide technical guidance and data support for ***mangrove*** species monitoring based on multi-source satellite data."

For more information on this research see: Performance Evaluation of ***Mangrove*** Species Classification Based on Multi-Source Remote Sensing Data Using Extremely Randomized Trees in Fucheng Town, Leizhou City, Guangdong Province. Remote Sensing, 2023,15(1386):1386. (Remote Sensing - http://www.mdpi.com/journal/remotesensing/). The publisher for Remote Sensing is MDPI AG.

A free version of this journal article is available at https://doi.org/10.3390/rs15051386.

Our news journalists report that additional information may be obtained by contacting Xinzhe Wang, Institute of Information Science and Engineering, Dalian Polytechnic University, Dalian 116034, People's Republic of China. Additional authors for this research include Linlin Tan, Jianchao Fan.

Keywords for this news article include: Dalian Polytechnic University, Dalian, People's Republic of China, Asia, Algorithms, Information Technology, Remote Sensing, Technology.

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