
[2A4][General Session] 2. Machine Learning

座長: 椿 真史 (産業技術総合研究所)

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5:20 PM - 5:40 PM

[2A4-01]Collecting whole sky images and classification of cloud genera and conditions

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Maritime meteorological observation is critical for a safe voyage, and general ships are required in Japan to report the observations to parties concerned. Since it is difficult to recognize the meteorological conditions for non-experts, the demand of automatic recognition arises. Many studies have tackled the classification of cloud genera and the regression of cloud cover. However, less attention has been paid for cloud conditions. Thus, we developed a machine learning system for classification of cloud conditions. We first developed a dedicated equipment for photographing whole sky images and collected data samples. Then, we tagged cloud genera and conditions in each cloud layer (high, middle, and low). Using the dataset, we built a deep convolutional neural network to classify the cloud genera and conditions via fine-tuning ResNet50. The network achieved accuracies higher than 0.9 for both cloud genera and conditions.