**Transferring Deep Convolutional Neural Networks for the Scene Classification of High-Resolution Remote Sensing Imagery**

摘要：将CNN框架应用到高分辨率遥感影像场景识别。本文提出两种从CNN不同的层中生成影像特征的方案，第一种，从全连接层中提取激活向量，作为最终的影像特征；第二中方案，从多尺度对最后一个卷积层提取密集特征，并通过常用的特征编码方法将此特征编码到全局影像特征。

In the first scenario, the activation vectors extracted from fully-connected layers are regarded as the final image features; in the second scenario, we extract dense features from the last convolutional layer at multiple scales and then encode the dense features into global image features through commonly used feature coding approaches.

近几年，高分辨率遥感影像场景分类进展缓慢，主要是因为一般方法无法提供足够的特征表达，而词袋模型BOW与一些无监督特征提取方法只能够建立“中层次”特征表达。而更高级的特征，是较低层次特征的抽象，能有效进行场景分类。

很难通过一个小的样本数据集来训练出高性能的卷积神经网络。

However, it is difficult to train a high-powered deep CNN with small datasets in practice.

很多研究表明，