

工程与应用

## 多导联EEG信号分类识别研究

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**摘要** 脑电信号是一种典型的非平稳随机信号, 对脑电信号的分类识别是非常困难的, 为了提高正确识别率, 提出多导脑电信号的分类识别方法。首先对受试者分别在睁眼和闭眼状态下的单导脑电信号进行特征提取, 然后选取多组识别效果不好的单导联的特征, 组合成为多导脑电信号特征, 最后用RBF核函数的支持向量机分类器进行分类识别。结果表明对多导联特征的正识率比单导联正识率有很大提高。结论: 多导脑电信号能够更好地反映大脑活动的整体信息, 噪声抑制能力较强, 因此多导联脑电信号特征的分类识别效果较好。

**关键词** [脑电信号](#) [多导联](#) [支持向量机](#) [正识率](#)

分类号

## Research on classification and recognition of multi-channel EEG Signal

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### Abstract

Nonstationary Randomness Signal (NRS) is difficult to deal with. In order to improve the performance of the classifying technique of NRS, a novel technique for classifying multi-channel EEG signal is introduced in the thesis. First of all, subjects in the states of eyes open and eyes closed with a single-channel EEG feature are extracted, then the characteristics of single-channel EEG signal with bad classifying results are selected and combined into multi-channel EEG characteristics. Finally, RBF Kernel Support Vector Machine classifier is used to classify the characteristics under different states. The results show that the correct classification rate is greatly improved. Conclusion: Multi-channel EEG signal can reflect the activity of overall information of the brain better, and has strong noise suppression capability, thus multi-channel EEG characteristics has effective classification results.

**Key words** [EEG](#) [multi-channel](#) [Support Vector Machine](#) [ratio of correct recognition](#)

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