

Design of Wireless BCI systems and application development

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Abstract

Over the past couple of decades, the study of Brain-Computer interfaces (BCI) has grown into a rich and diverse field, the critical goal of which is to allow operation of various devices. However, many conventional BCI systems are wired BCI systems. The acquisition part of wired BCI systems generally comes with bulky and heavy amplifiers and preprocessing units. Connection wiring is complicated with a large number of cables between electrodes and acquisition part. For these reasons, user's movement is limited and application of BCI is difficult to escape from laboratory scale experiments. Wireless BCI systems have the clear advantages than wired BCI systems that they are simple, convenient, mobile, and flexible. Recent wireless BCI applications attempt to help people live more conveniently in many areas: medical engineering, rehabilitation, and daily life. We are currently making innovative wireless BCI system and target application development.