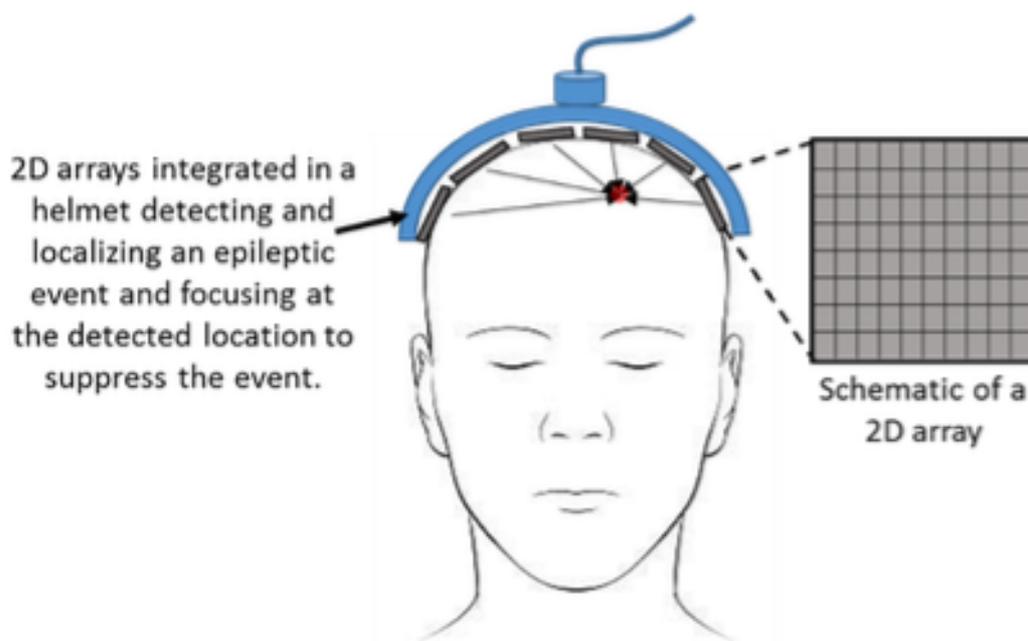


Ultrasound for Detecting and Suppressing Epileptic Seizure

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Technology description

Engineers at the Khuri-Yakub Group have designed a non-surgical alternative for treating epilepsy using ultrasonic technology which can detect, localize, and suppress epileptic seizures in epileptic patients. This technology is based on an array of ultrasound transducers placed in a helmet over the head of the patient that are instrumented to detect epileptic events. Once the event is detected and located, ultrasound energy will suppress the action firing and blunt the seizure. This approach can be extended to include the detection and suppression of other brain states and emotion such as anger. Figure



Additional Information

<https://kyg.stanford.edu>

Application area

Detecting and suppressing epileptic seizures Future applications can include detecting and suppressing or replacing other brain states and emotions such as anger

Advantages

Non-invasive– to date, no non-invasive treatment exists
Improvement compared to current methods:
For detection, better spatial resolution vs. EEG
For detection, better temporal resolution vs. fMRI/CT scans
Less expensive
More compact and portable
Customizable– algorithms can be tailored to unique shape and outline of skull

Institution

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