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Nakagawa

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(54) **EMOTIONAL STATE DETERMINING APPARATUS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 333 days.

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(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

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An emotional state determining apparatus capable of determining an emotional state of a subject without reducing determination accuracy even if the number of brain wave signals to be used is reduced. A multifractal dimension computing section 3 computes multifractal dimensions based on brain wave signals or brain wave difference signals. An emotional state determining section 4 receives input data on the multifractal dimensions, and determines an emotional state of the subject based on determination criteria which are determined in advance by using as reference data the brain wave signals obtained from a reference person. Generalized latent dimensions (vector) respectively obtained by substituting a plurality of different values determined in advance for a Hurst exponent characteristic q in a generalized latent dimension $Dq=1/Hq$, which is a reciprocal number of a generalized Hurst exponent Hq obtained from the brain wave signals or the brain wave difference signals, are used as the multifractal dimensions.

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(52) **U.S. Cl.**
USPC **600/544**

(58) **Field of Classification Search**
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See application file for complete search history.

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8 Claims, 13 Drawing Sheets

