

Ist der Alpha Attenuation Test wirklich ein Müdigkeitstest? Eine Auswertung mit neuroinformatischen Methoden

René Gerber, David Sommer, Martin Golz

Fachbereich Informatik, Fachhochschule Schmalkalden, Deutschland

r.gerber@fh-sm.de

***Abstract**— The alpha attenuation test was performed on 15 young subjects during one night in a driving simulation laboratory. Recorded electroencephalograms were analyzed by estimation of alpha attenuation coefficients and by neural networks to track the goal of discrimination of fatigue states and drowsy states. Calculated alpha attenuation coefficients showed no consistent results; they varied non-monotonically over night, their trends compared among different subjects were not uniformly and was in contradiction to subjective measures of fatigue and of activation. Classification of fatigue and drowsy states by processing EEG in complete pattern recognition chains based on neural networks showed also bad performance. These results give support to the hypothesis that the alpha attenuation test measures not fatigue and drowsiness but relaxation.*

***Keywords**—AAT, Fatigue, EEG, Neural Networks.*