

1. Record Nr.	UNINA9910956416103321
Titolo	Advances in understanding human performance : neuroergonomics, human factors design, and special populations // editors, Tadeusz Marek, Waldemar Karwowski, Valerie Rice
Pubbl/distr/stampa	Boca Raton : , : CRC Press, , 2011
ISBN	9781040210314 1040210317 9780429151743 0429151748 9781138111813 1138111813 9781439835029 1439835020
Edizione	[1st ed.]
Descrizione fisica	1 online resource (912 p.)
Collana	Advances in human factors and ergonomics series
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Disciplina	620.82
Soggetti	Human engineering Neuroergonomics Work design - Psychological aspects Environmental psychology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A CRC title."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Front Cover; Table of Contents; Preface; Section I: Neuroergonomics: Workload Assessment; Chapter 1: Neurogenetics of Working Memory and Decision Making under Time Pressure; Chapter 2: From Subjective Questionnaires to Saccadic Peak Velocity: A Neuroergonomics Index for Online Assessment of Mental Workload; Chapter 3: Cognitive Workload Assessment of Air Traffic Controllers Using Optical Brain Imaging Sensors; Chapter 4: Prestimulus Alpha as a Precursor to Errors in a UAV Target Orientation Detection Task Chapter 5: Decoding Information Processing When Attention Fails: An

Electrophysiological Approach Chapter 6: Towards Adaptive Automation: A Neuroergonomic Approach to Measuring Workload During a Command and Control Task; Chapter 7: A Predictive Model of Cognitive Performance Under Acceleration Stress; Chapter 8: Static and Dynamic Discriminations in Vigilance: Effects on Cerebral Hemodynamics and Workload; Section II: Models and Measurement in Neuroergonomics; Chapter 9: 4th Dimensional Interactive Design For Dynamic Environments Chapter 10: Developing Methods for Utilizing Physiological Measures Chapter 11: Methods from Neuroscience for Measuring User Experience in Work Environments; Chapter 12: Subjective and Objective Measures of Operator State in Automated Systems; Chapter 13: Brain Power: Implementing Powerful Neurally-Inspired Mechanisms in Computational Models of Complex Tasks; Chapter 14: ESP2: A Platform for Experimental Design in Cognitive Ergonomics; Chapter 15: Modeling Sleep-Related Activities from Experimental Observations - Initial Computational Frameworks for Understanding Sleep Function(s) Chapter 16: Physiological Day-to-Day Variability Effects on Workload Estimation for Adaptive Aiding Chapter 17: Challenges of Using Physiological Measures for Augmenting Human Performance; Chapter 18: Infrasonic Analysis of Human Speech: An Index of Workload; Section III: Neuroergonomics and Human Performance; Chapter 19: Real-Time Classification of Neural Signals Corresponding to the Detection of Targets in Video Imagery; Chapter 20: Understanding Brain Arousal and Sleep Quality Using a Neuroergonomic Smart Phone Application Chapter 21: A Neuroergonomic Perspective on Human-Automation Etiquette and Trust Chapter 22: Neuroethics: Protecting the Private Brain; Chapter 23: Activity of Alerting, Orienting and Executive Neuronal Network Due to Sustained Attention Task - Diurnal fMRI Study; Chapter 24: Characteristic Changes in Oxygenated Hemoglobin Levels Measured by Near-Infrared Spectroscopy (NIRS) During "Aha" Experiences; Chapter 25: Performance Under Pressure: A Cognitive Neuroscience Approach to Emotion Regulation, Psychomotor Performance and Stress Chapter 26: A Framework for Improving Situation Awareness of the UAS Operator through Integration of Tactile Cues

Sommario/riassunto

Combining emerging concepts, theories, and applications of human factors knowledge, this volume focuses on discovery and understanding of human performance issues in complex systems, including recent advances in neural basis of human behavior at work (i. e. neuroergonomics), training, and universal design. The book is organized into ten sections that focus on the following subject matters: I: Neuroergonomics: Workload Assessment II: Models and Measurement in Neuroergonomics III: Neuroergonomics and Human Performance IV: Neuroergonomics and Training Issues V: Trainees: Designing for Those in Tra