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Scientizing human error. Pondering safer interfaces between human and systems based on the examination and understanding of cognitive and behavioral traits

Higher level of safety for aviation system



ATC system

- Task analysis of air traffic control
- Training method for preventing communication errors
- Analysis of decision making process for enhancing resilient performance

Human state estimation based on physiological measurement

Ultra small NIRS device



JINS-MEME

- Brain measurement using NIRS
- Human state estimation using JINS-MEME
- State estimation based machine learning methods

Analysis and application of expert skills for safe operations

For higher level of safety

Application of human state estimation methods

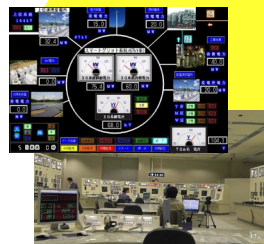
Cognitive engineering for Cyber security



- Diagnosis system based on hypothesis based inference
- Application of generalized failure mechanism knowledge

Development of cyber attack early recognition system

Situation adaptive system for severe accident management



- Analysis human decision strategy under time pressure
- Team performance evaluation
- Adaptive interface

Estimation of human performance in unexpected situations

Research Themes

- Enhancing human performance in unexpected, severe situations
- Harmonizing human and advanced automated systems using AI technologies
- Human factors for aviation system
- Human-machine interface evaluation based on physiological measurement
- Social acceptance of advanced technologies (AI, nuclear energy)

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