Applied Mathematics Seminar

Prof. Mario Fific – Psychology Dept. – Grand Valley State University

Friday, March 15 1-1:50pm

MAK A-2-167 or via zoom (request password from ortizron at gvsu dot edu)

Simple Factorial Tweezers for detecting delicate serial and parallel processes: Refining Cognitive Process Analysis: The Non-Parametric SFT Approach for Unveiling Serial and Parallel Mental Architectures

Abstract: This presentation explores the intricacies of human cognitive processes, which are often fleeting and not directly observable, typically unfolding in less than a second. At the core of our exploration is the Systems Factorial Technology (SFT), a groundbreaking, non-parametric methodology that stands as a pivotal innovation for probing the organization of mental processes underlying a wide array of cognitive tasks. Leveraging rigorously tested mathematical tools, SFT offers a unique lens through which the formal properties of hypothesized mental networks—such as processing order, stopping rules, and process dependencies—can be examined without the constraints of parametric assumptions. Over the past fifty years, theoretical exploration has sought to understand how the human mind organizes its processing capabilities. SFT enables direct investigation of these properties, offering insights into serial and parallel processing, exhaustive versus self-terminating stopping rules, and the independence or dependence of stochastic processes. It also allows for the assessment of cognitive systems' capacity in a distribution-free and non-parametric manner. Our research aims to further refine and expand SFT's application, developing new tools to analyze mental networks that encompass more than two processes and to address the complexities of non-homogeneous networks exhibiting both serial and parallel processing characteristics. By focusing on the non-parametric nature of SFT, we aim to deepen our understanding of the rapid, intricate organization of human mental processes underlying diverse cognitive tasks. This approach not only enhances the methodological rigor of cognitive process analysis but also opens new pathways for investigating the dynamic interplay of mental operations in complex cognitive tasks.

Applied Math Seminar- Pizza RSVP

More info: http://bit.ly/applied-math-seminar

**Hosted by the Mathematics Department, GVSU

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