

# Covering arrays: new generalizations for software testing applications

## Organizer(s):

Lucia Moura (University of Ottawa)

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## Description:

Covering arrays are combinatorial designs that are used for testing systems such as software, circuits and networks, where failures can be caused by the interaction between their components or parameters. New generalizations of these objects employ techniques from design theory, graph homomorphisms, combinatorial group testing, among other fields. This minisymposium highlights current research that addresses some of the challenges that arise in real testing situations. Models under study incorporate graphs and hypergraphs to select relevant interactions to be tested, specification of forbidden interactions, and the ability to locate faulty interactions. This session will be closed by a talk discussing empirical data from applications and other challenges to be faced.

## Titles and Speakers:

- *Adaptive algorithms for locating faulty interactions*  
Lucia Moura (University of Ottawa)
- *Covering arrays avoiding forbidden configurations*  
Peter Danziger (Ryerson University)
- *Covering arrays on graphs*  
Karen Meagher (University of Waterloo)
- *Constructions for optimal mixed covering arrays on graphs and hypergraphs*  
Christine Cheng (University of Wisconsin-Milwaukee)
- *Empirical results and practical extensions: using covering arrays to test configurable software*  
Myra Cohen (University of Nebraska-Lincoln)