

## **Einladung zum Kolloquium**

**Freitag, 21.6.2024, 10:00 Uhr  
im SR 004 im ITZ-Gebäude  
auf Einladung  
von Prof. Dr. Dirk Sudholt  
zum Vortrag von**

**Aneta Neumann und Frank Neumann  
(University of Adelaide, Australia)**

### **Evolutionary Diversity Optimisation: Introduction and Recent Results**

**Abstract:** In the classical setting evolutionary algorithms (EAs) are used to compute a single solution of high quality with respect to the objective function or a set of trade-off solutions in the field multi-objective optimization where one deals with multiple, usually conflicting objectives. Traditionally, diversity preservation is introduced as a means to prevent premature convergence. In many engineering applications and in the field of algorithm selection/configuration however, it is beneficial to produce a set of solutions that is (1) of high quality and (2) diverse with respect to the search space and/or some features of the given problem. Evolutionary Diversity Optimization enables the computation of a large variety of new and innovative solutions that are unlikely to be produced by traditional evolutionary computation methods for single-objective or multi-objective optimization. In this talk, we will give an introduction into evolutionary diversity optimization and highlight some recent results from the areas of communication networks and health.