

Special Session for the 6th ICO-2023

Name/Affiliation:

Prof. PhD. Gebrail Bekdaş / Department of Civil Engineering, Istanbul University – Cerrahpaşa, Istanbul, Türkiye

Assoc. Prof. PhD. Sinan Melih Nigdeli / Department of Civil Engineering, Istanbul University – Cerrahpaşa, Istanbul, Türkiye

Title of the SS: Metaheuristics and Artificial Intelligence in Civil Engineering

Short Profile:

Gebrail Bekdaş, Professor, is researcher in Mechanics Division of Civil Engineering at Istanbul University - Cerrahpaşa. He obtained his DPhil in Structural Engineering from Istanbul University with a thesis subject of design of cylindrical walls. He co-organized 15th EU-ME Workshop: Metaheuristic and Engineering in Istanbul. In optimization, he organized several mini-symposiums or special sections in prestigious international events such as 12th International Congress on Mechanics (HSTAM2019), 9th International Congress on Computational Mechanics (GRACM 2018), the Biennial International Conference on Engineering Vibration (ICoEV-2015), 3rd International Conference on Multiple Criteria Decision Making (MCDM 2015), 11th. World Congress on Computational Mechanics (WCCM2014), International Conference on Engineering and Applied Sciences Optimization (OPTI 2014), 11th Biennial International Conference on Vibration Problems (ICOVP2013), 3rd European Conference of Civil Engineering and 10th, 11th and 15th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM). He co-edited Metaheuristics and Optimization in Civil Engineering and other titles published by Springer and IGI Global. He is one of the guest editors in 2017 special issue of KSCE Journal of Civil Engineering. He co-chaired 6th International Conference on Harmony Search, Soft Computing and Applications (ICHSA 2020). He has authored more than 300 papers for journals and scientific events.

Sinan Melih Nigdeli, Associate Professor, is a researcher in Mechanics Division of Civil Engineering at Istanbul University - Cerrahpaşa. He obtained his DPhil in Structural Engineering from Istanbul Technical University with a thesis subject of active control. He co-organized 15th EU-ME Workshop: Metaheuristic and Engineering in Istanbul. About optimization, he organized several mini-symposiums or special sections in prestigious international events such as 12th International Congress on Mechanics (HSTAM2019), 9th International Congress on Computational Mechanics (GRACM 2018), the Biennial International Conference on Engineering Vibration (ICoEV-2015), 3rd International Conference on Multiple Criteria Decision Making (MCDM 2015), 11th. World Congress on Computational Mechanics (WCCM2014), International Conference on Engineering and Applied Sciences Optimization (OPTI 2014), 11th Biennial International Conference on Vibration Problems (ICOVP2013), 3rd European Conference of Civil Engineering and 10th, 11th and 15th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM). He co-edited Metaheuristics and Optimization in Civil Engineering and other titles published by Springer and IGI Global. He is one of the guest editors in 2017 special issue of KSCE Journal of Civil Engineering. He co-chaired 6th International Conference on Harmony Search, Soft Computing and Applications (ICHSA 2020). He has authored more than 300 papers for journals and scientific events.

Short description of the SS:

In addition to design, best efficiency with minimum costs is a vital goal of an engineer. While computing engineering problems, selecting several design variables are depended to the decision of engineers. By using optimization techniques, it is possible to find best suitable design variables. Also, optimization techniques can be used for solving uncertain and nonlinear problems. Metaheuristics are generally an effective tool in this challenge. In order to minimize the long process time in iterations of optimization or analysis, artificial intelligence and machine learning can provide a rapid predictive design.

New optimization approaches and applications of existing methods on engineering problems are developing subjects. The aim of this special issue is to bring academicians working on the topic together in order to present and discuss their research. Application about all disciplines of civil engineering that studies propose efficient and innovative design approaches according to numerical analyses and experiments are covered in the special issue.