SERAFEIM BAKALAKOS

School of Civil Engineering, National Technical University of Athens
Laboratory of Structural Analysis and Antiseismic Research
e-mail: sbakalakos@central.ntua.gr, serafeim.bakalakos@outlook.com

EDUCATION

Ph.D. in Computational Mechanics   *Sep. 2017 – Jun. 2022*
National Technical University of Athens, School of Civil Engineering
Ph.D. thesis title: *Advanced high performance computing methods for the solution of crack propagation and material design problems using the extended Finite Element method (XFEM)*

M.Sc. in Analysis and Design of Structures   *Sep. 2015 – Oct. 2017*
National Technical University of Athens, School of Civil Engineering

Diploma in Civil Engineering   *Sep. 2009 – Oct. 2015*
National Technical University of Athens, School of Civil Engineering, Specialization: *Structural Engin.*

TECHNICAL & OTHER SKILLS

Programming Languages	C#, Java, C/C++, CUDA C, Python, Javascript
Scientific Software	MATLAB, Abaqus, Paraview
Other Software	LaTeX, Microsoft Office, Autocad
Languages	Greek, English (Proficiency of Cambridge), German (Zertifikat Goethe)

PUBLICATIONS IN SCIENTIFIC JOURNALS

1. Chroni E., **Bakalakos S.**, Sotiropoulos G., Papadopoulos V., "Topology optimization of bi-material structures with IsoXFEM", Composite Structures (2024), DOI:10.1016/j.compstruct.2024.117902
2. Papadopoulos L., **Bakalakos S.**, Nikolopoulos S., Kalogeris I., Papadopoulos V., "A computational framework for the indirect estimation of interface thermal resistance of composite materials using XPINNs", International Journal of Heat and Mass Transfer (2023), DOI:10.1016/j.ijheatmasstransfer.2022.123420
3. **Bakalakos S.**, Georgioudakis M., Papadrakakis M., "Domain Decomposition Methods for 3D Crack Propagation Problems Using XFEM", Computer Methods in Applied Mechanics and Engineering (2022), DOI:10.1016/j.cma.2022.115390
4. **Bakalakos S.**, Kalogeris I., Papadopoulos V., Papadrakakis M., Maroulas P., Dragatogiannis D.A., Charitidis C.A., An integrated XFEM modeling with experimental measurements for optimizing thermal conductivity in carbon nanotube reinforced polyethylene, *Modelling and Simulation in Materials Science and Engineering* (2022), DOI:10.1088/1361-651X/ac4899

5. **Bakalakos S.**, Kalogeris I., Papadopoulos V., An extended finite element method formulation for modeling multi-phase boundary interactions in steady state heat conduction problems, *Composite Structures*, vol. 258 (2021), DOI:10.1016/j.compstruct.2020.113202

PUBLICATIONS IN CONFERENCE PROCEEDINGS

1. **Bakalakos S.**, Georgioudakis M., Papadrakakis M., *Domain Decomposition Methods for Crack Growth Problems Using XFEM*, 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN), Crete, Greece, 24-26 June 2019

PARTICIPATION IN RESEARCH PROJECTS

- *Data driven computational mechanics at exascale (DCoMEX)*, under the call H2020-JTIEuroHPC-2019-1, Budget: 3.000.000 €, project's duration 3 years (Participation: 15/9/2021 - present)

- *An integrated cloud platform for the simulation and standardization of high performance materials and products (Materialize – MIS 5129436)*, European Regional Development Fund and Greek National Funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call Research-Create-Innovate (2nd Cycle), Budget: 201.300 €, project's duration 3 years (Participation: 1/10/2021- present)

- *Optimal multiscale design of innovative materials for heat exchange applications, (HEAT-68/1286)*, European Regional Development Fund and Greek National Funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call Research-Create-Innovate, Budget: 800.000 €, project's duration 3 years (Participation: 10/12/2018-31/12/2019)

- *Mastering the computational challenges in numerical modeling and optimum design of CNT reinforced composites, (MASTER)*, European Research Council Advanced Grant. Budget: 2.500.000 €, project's duration 5 years (Participation: 2/1/2013-28/2/2018)

TEACHING EXPERIENCE

- Teaching assistant in National Technical University of Athens, Department of Civil Engineering
  Course: Computational Techniques and Solution Algorithms (2017-today, graduate level)
- Adjunct Assistant Professor in University of Thessaly, Department of Civil Engineering
  Courses:
  - o Strength of materials (2023)
  - o Analysis of Surface Structures (2023)
- Adjunct Assistant Professor in School of Pedagogical and Technological Education, Athens, Department of Civil Engineering (2024)
  Course: Dynamic analysis of structures (2024)

AWARDS & DISTINCTIONS

- Scholarship for Ph.D. dissertation from Special Account for Research Funding (E.L.K.E.) of National Technical University of Athens (N.T.U.A.), duration: 2017-2021

- Limmat Stiftung Award: Great Undergraduate Performance - 1st in Class of 2015, School of Civil Engineering, National Technical University of Athens