OIPE 2027
5-9 September, Pisa, Italy

## 19th International Workshop on Optimization and Inverse Problems in Electromagnetism 2027

**September 5 – 9, 2027 | Pisa, Italy**

# Call for Papers

Dear colleagues,

on behalf of the organization committee, we are pleased to announce that the 19th International Workshop on Optimization and Inverse Problems in Electromagnetism will be held on **September 5 – 9, 2027 in Pisa, Italy**.
The workshop will be organized by the Department of Energy, Systems, Territory and Construction Engineering of the University of Pisa.

The aim of this workshop is to discuss and share recent developments in optimization and inverse methodologies and their applications to the design and working principle of electromagnetic devices. A special focus will be put on topology optimization and optimal energy management.
It will also provide an opportunity to meet experts working in several cutting-edge research fields in engineering, mathematics and physics, in the general framework of the innovation in electromagnetic methods and applications. The conference program will consist of invited lectures, oral presentations and poster sessions.

Pisa is an eclectic town, a place where an extraordinary historical and artistic heritage coexists with a strong tradition of academic excellence and scientific innovation. Famous worldwide for its monuments, including the iconic Piazza dei Miracoli, Pisa fascinates with its medieval architecture and centuries-old cultural legacy. The history of the city dates back over a thousand years, while its role as a leading academic center has developed through the continuous growth of its universities and research institutions. Alongside the University of Pisa, the Scuola Normale Superiore and the Scuola Superiore Sant'Anna represent internationally recognized centers of excellence in science, engineering, and the humanities. The city is also home to the Botanical Garden of Pisa, the oldest university botanical garden in the world, symbolizing the long-standing connection between knowledge, science, and nature. Today, Pisa is a vibrant university city, deeply connected to research, technology, and innovation, where history and modern scientific progress meet. We invite members of the scientific community in universities, research centers, and industry to attend the workshop and present their recent achievements.

We are looking forward to meeting you all in Pisa at the OIPE 2027!

S. Barmada
OIPE 2027 Chair

### Important dates

- Digest submission *(2 pages)* **April 30, 2027**
- Notification of acceptance **June 11, 2027**
- Doctoral course **September 9, 2027**
- Full paper submission **October 15, 2027**

### International steering committee

- P. Di Barba, Italy, *Chair*
- M. Ziółkowski, Poland, *Scientific Secretary*
- D. Baumgarten, Austria
- G. Crevecoeur, Belgium
- L. Dupré, Belgium
- A. Formisano, Italy
- L. Gerbaud, France
- J. Haueisen, Germany
- D. Lowther, Canada
- C. Magele, Austria
- I. Marinova, Bulgaria
- A. Reinbacher-Köstinger, Austria
- M. Repetto, Italy
- A. Salvini, Italy
- B. Sareni, France
- A. Savini, Italy
- J. K. Sykulski, UK
- S. Wiak, Poland
- F. Wurtz, France
- I. Yatchev, Bulgaria

### Organizing committee

- S. Barmada
- A. Formisano
- M.E. Mognaschi
- M. Tucci
- S. Dodge

## Contact and further information

www.oipe2027.ing.unipi.it

oipe2027@ing.unipi.it

### Scientific Topics

#### Theoretical aspects and fundamentals

- Mathematical theory and formulation of inverse and optimization problems
- Neural meta-modelling
- Regularization techniques
- (Model) order reduction
- Identification problems
- Sensitivity analysis
- Design optimization

#### Algorithms

- Machine learning techniques for optimization and inverse problems
- Reconstruction techniques
- Deterministic, stochastic and hybrid techniques
- Multi-objective and multi-level optimization
- Heuristic approaches
- Design of experiments
- Constraint handling
- Robust optimization under uncertainty
- Objective functions and direct problems
- Algorithmic efficiency

#### Applications

- Optimal energy management
- Biomedical engineering
- Control systems
- Coupled problems
- Electrical machines
- Industrial and biomedical tomography
- Information and communication systems
- Large scale systems
- Mechatronics
- Micro- and nano-systems
- Non-destructive evaluation
- Sensors and actuators
- Smart applications
- Transportation and mobility
- High frequency and antenna design
- Benchmark problems

#### Software methodologies

- Parallel and distributed computing, GPU
- Soft computing and artificial intelligence

## Digest submission

Authors are encouraged to submit a two-page digest due by **April 30, 2027**. A template of the digest is available on the workshop website.
All contributed papers will undergo a peer reviewing procedure to determine their suitability for presentation. Notification of the acceptance of the contribution will be given on **June 11, 2027**. Digests of contributions included in the workshop program will be part of the workshop proceedings.

## Publications

Authors of accepted contributions are invited to submit a full paper that will be considered for publication, likely in COMPEL or IJAEM journal, depending on the content, and in other journals to be defined. Detailed information regarding the full paper submission can be found on the website. The submission deadline will be **October 15, 2027**.

## Doctoral course

After the Workshop a one-day doctoral course is scheduled **(September 9, 2027**). International experts will teach PhD students and researchers entering the field in selected aspects.

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