

APPLIED AND COMPUTATIONAL ELECTROMAGNETICS (ACE)

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Applied and Computational Electromagnetics

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The ACE research group (20 people) is located in the Montefiore Institute, home to the Department of Electrical Engineering and Computer Science. ACE is involved in various aspects of **design, modeling and testing of electromagnetic phenomena and devices**:

- from **static and quasistatic problems** (electrotechnics)...
- ...to **wave scattering and optics**,
- as well as a wide variety of **coupled “multiphysic” problems** involving electromagnetic phenomena

Modeling and Simulation

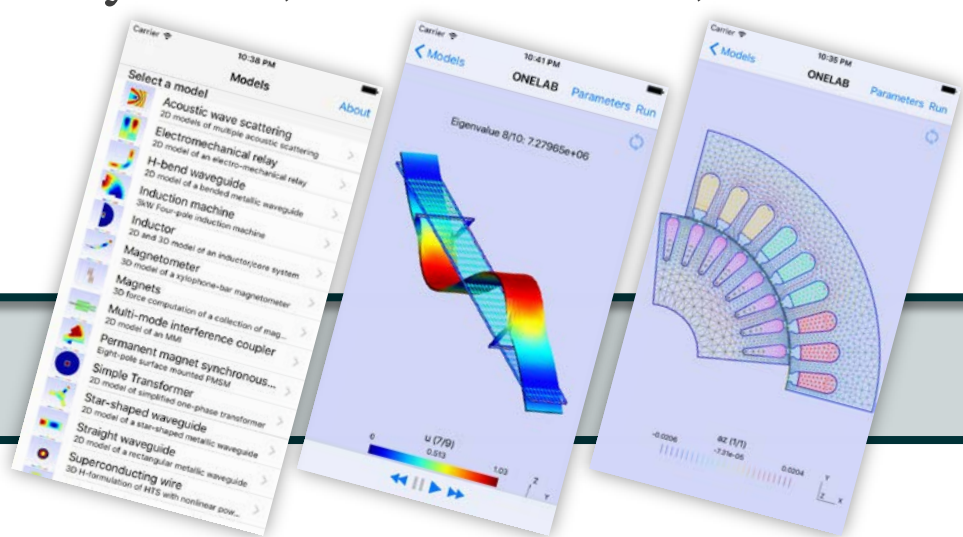
At the intersection of:

- **Applied Physics** (low- and high-frequency electromagnetics and acoustics, material models, mathematical formulations)
- **Applied Mathematics** (numerical partial differential equations, integral equations, fast solvers)
- **Computer Science** (high performance scientific computing, finite element mesh generation)

Internationally renowned for **open source software**

- Several thousand users & international developer community
- **Gmsh** probably the most popular open source mesh generator in the world
- **GetDP** flexible FEM solver, **ONELAB** interface
- Applications: biomedical, renewable energy, RF circuits, high-frequency waves, non destructive testing, electromechanical machines, high-voltage problems, optics & photonics, microsystems, meta-materials, ...

Give it a try: <http://onelab.info>
(also for iPhone & Android!)



Experimental Laboratories

Three **high-tech laboratories**:

- Semi-anechoic chamber up to 26 GHz
- Reverberating chamber
- Low-voltage laboratory
- Applications: electromagnetic compatibility, material characterization, biomedical measurements, military & space applications, ...

