New Release in October 2019
Optical Cavity Mode Solver
OCMS 2019
Software Package

Powerful tool to compute complex optical modes of 2D microcavities using the boundary element method for Science and Engineering of Lasers, Optical Sensors, and Photonic Devices

Enabling accurate, systematic and efficient computation of resonant modes for a single- or multi-domain cavity with arbitrary smooth boundaries.
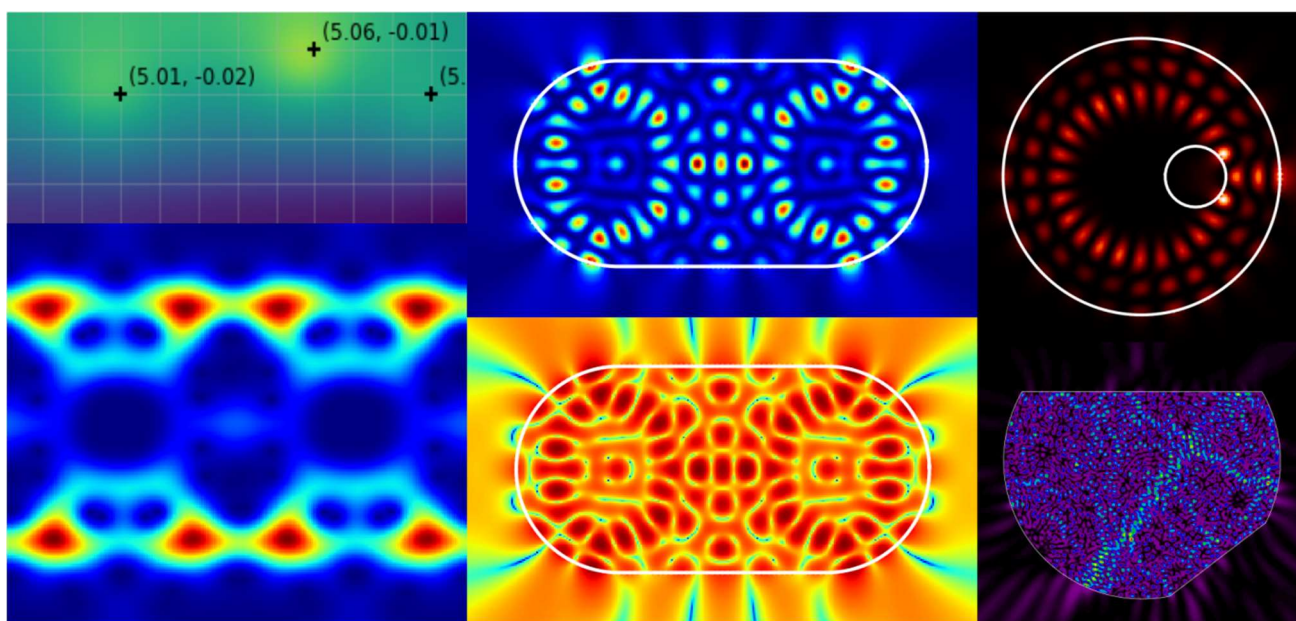
Product Name: OCMS-2019-Basic

Supported OS: Linux (Recommended: Ubuntu LTS 16.04, 18.04)

Computation modules:
- BEM solver module with the basic shape library (7 shapes including deformed circles and stadium)
- Wave function computation module
- Husimi distribution computation module

Analysis and visualization tools:
- Resonance detection tool
- 2D data plot tool
- Far-field and near-field pattern plot tool

Reference documents: Quick guide, User's manual

Optional Features: Advanced shape library, Shape debugging tool, Batch plot module, Auto resonance search module

Contact:

Telecognix Corporation

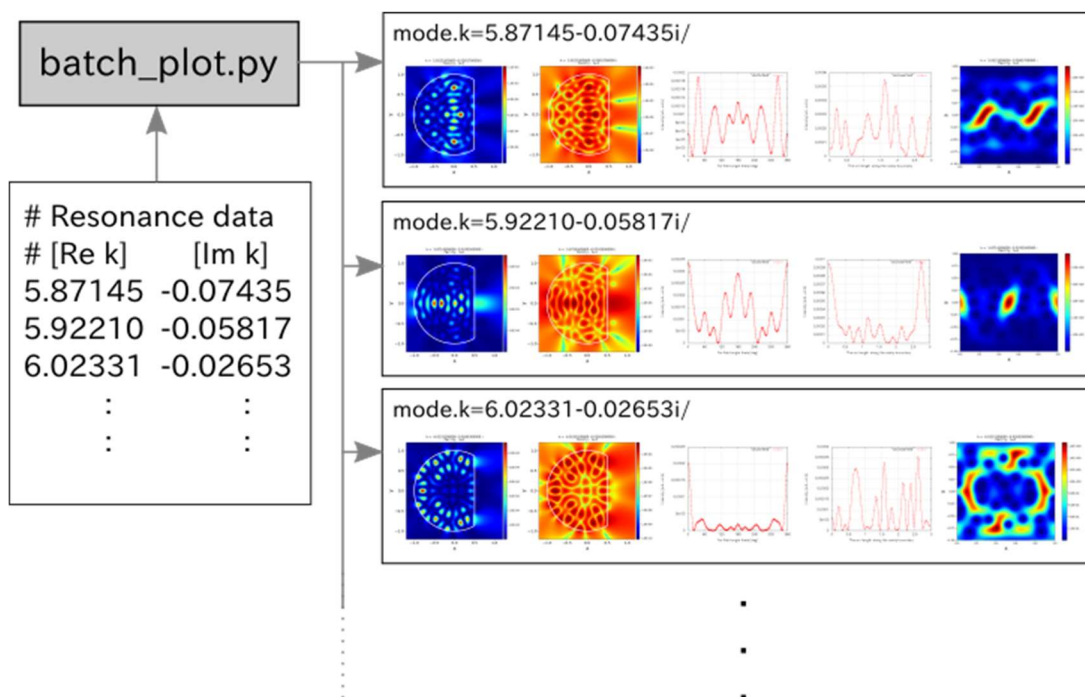Sakyo-ku, Yoshida Shimoojicho 58-13, Kyoto 606-8314 Japan

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New Release in December 2019
Optical Cavity Mode Solver OCMS 2019
Extension Package 1: Tools for Computing Mode Patterns

Extension package for OCMS-2019-Basic including an automation tool that enables efficient computation and plotting of modal patterns.

This extension package features a batch computation and plotting tool for wave functions and Husimi distributions. For a given resonance list, this tool generates image files for the wave function (normal and log scale), far-field and near-field patterns, and Husmi distribution for each of the resonances on the list (see the diagram below).

Product Name: OCMS-2019-Extnsion-Tools-1

  Supported OS: Linux (Recommended: Ubuntu LTS 16.04, 18.04)

  Requisite: OCMS-2019-Basic

  Contained tools and codes:

- Tool for batch computation and plot of wave functions and Husimi distributions (batch_plot.py).
- Cavity shape debugging tool (boundary_plot.py).
- Advanced cavity shape library (cardioid, elliptic, and flattened quadrupole cavities).

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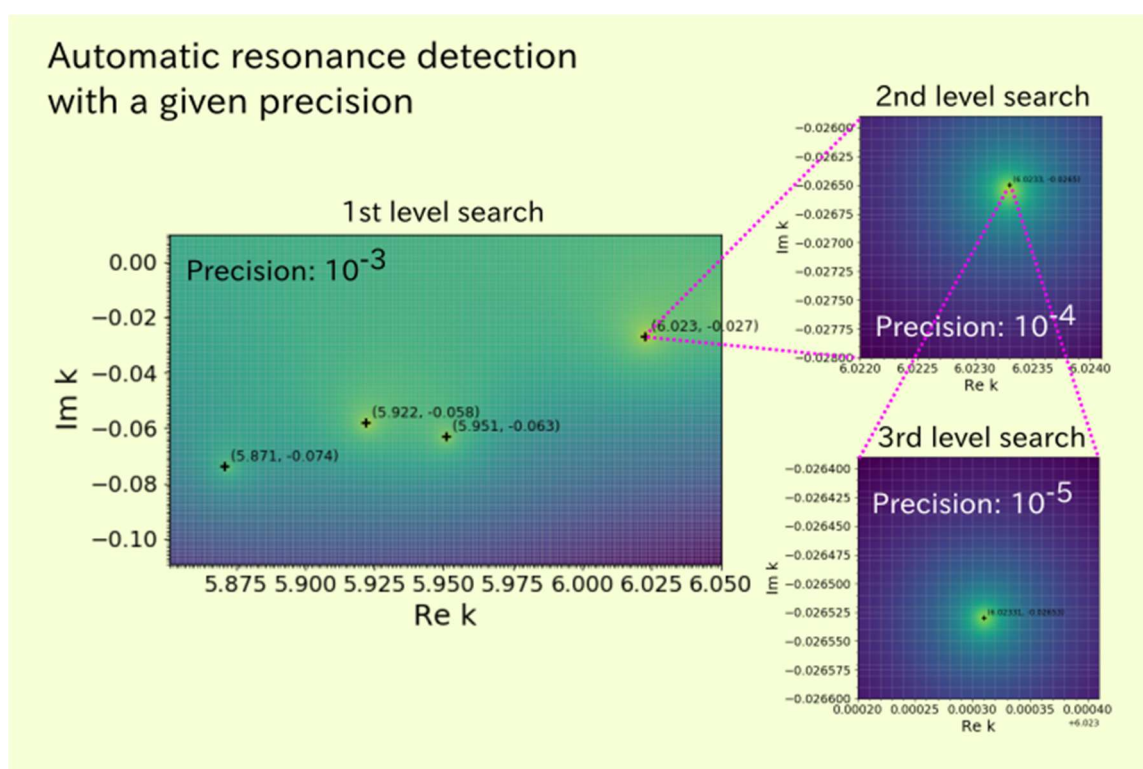Sakyo-ku, Yoshida Shimoojicho 58-13, Kyoto 606-8314 Japan

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Extension Package 2: Tools for Computing Resonances

Extension package for OCMS-2019-Basic including a tool for automatically detecting resonances in a given wave number range with a desired precision.

This extension package features a tool for automatically detecting resonances in the complex wave number space. For a given wave number range, this tool detects the resonance positions (i.e., (Re k, Im k)) with a given precision (see the figure below). In addition to a full automation of the resonance detection routine, the detection processes are performed in parallel using multiple threads. These features enable the user to largely save the time and effort for a systematic resonance detection.

Product Name: OCMS-2019-Extension-Tools-2

Supported OS: Linux (Recommended: Ubuntu LTS 16.04, 18.04)

Requisite: OCMS-2019-Basic

Contained tools:

- Tool for automatically detecting resonances (autofinder.py).
- Auxiliary tool for the BEM computation (estimateNBE).

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