

Education and Business Style Innovation by Apps Created with the COMSOL Multiphysics® Software

Masanori Hashiguchi¹ and Dahai Mi¹

¹Keisoku Engineering System Co., Ltd, 1-9-5 Uchikanda, Chiyoda-ku, Tokyo 101-0047, Japan

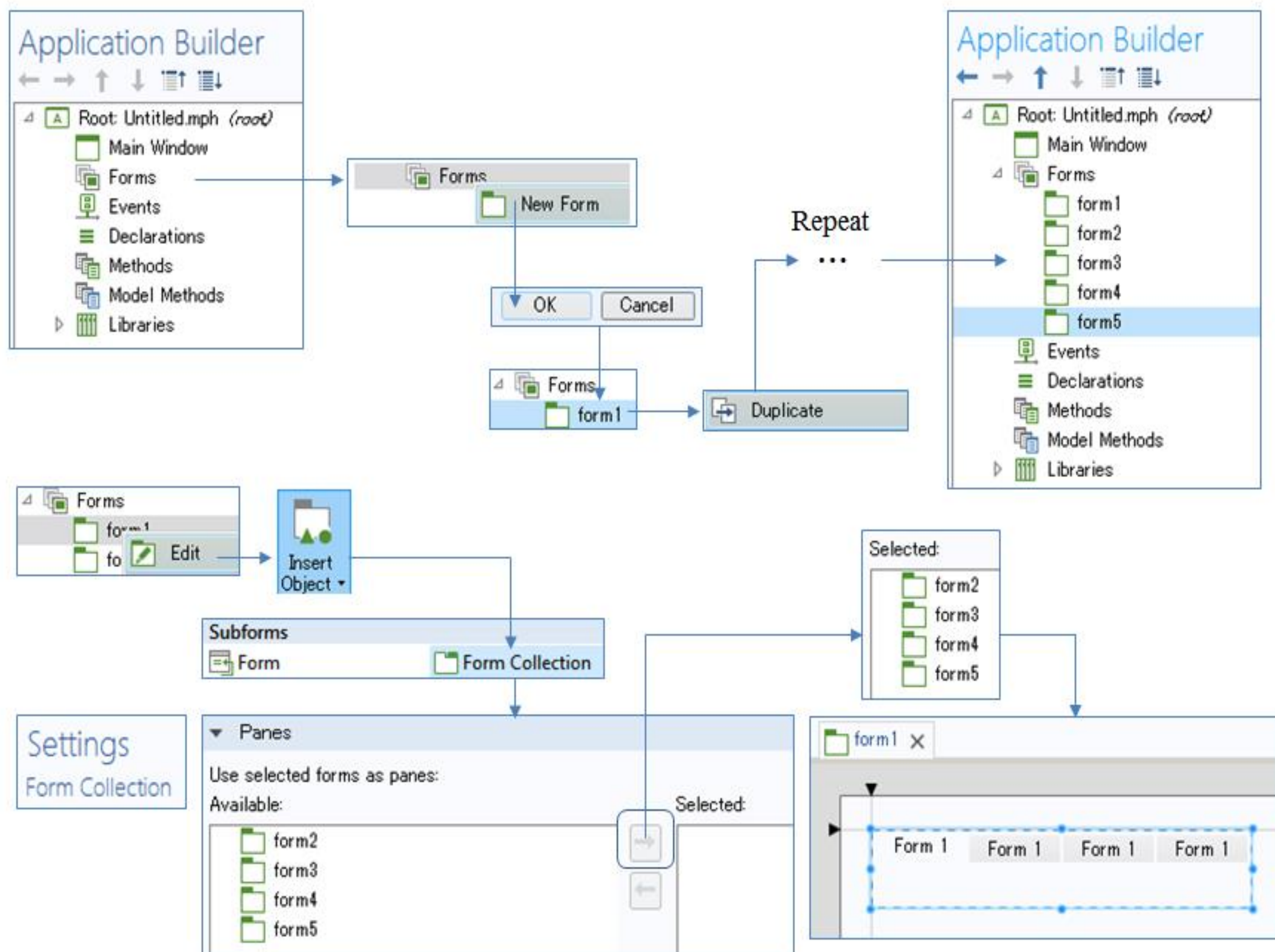
Abstract

This paper investigates how to construct Apps via COMSOL Application Builder with simplest way. We show some Apps constructed based on the procedure proposed here. It was shown that the present procedure can make effective Apps very easily and innovate lecture style and relating business style.

Proposed procedure for designing Apps

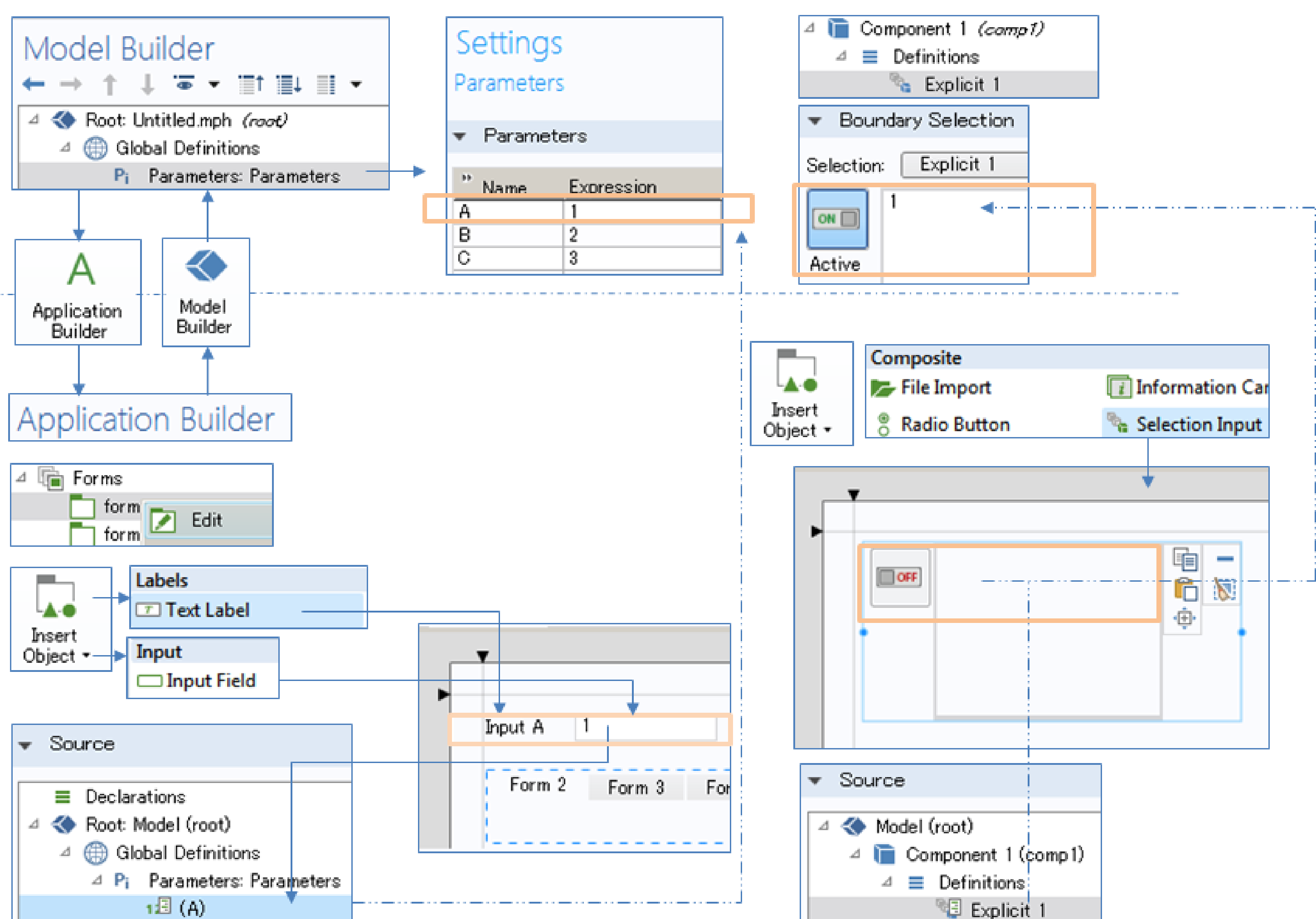
Procedure A:

Use Forms with Tabs in order to construct the simplest Apps easily.



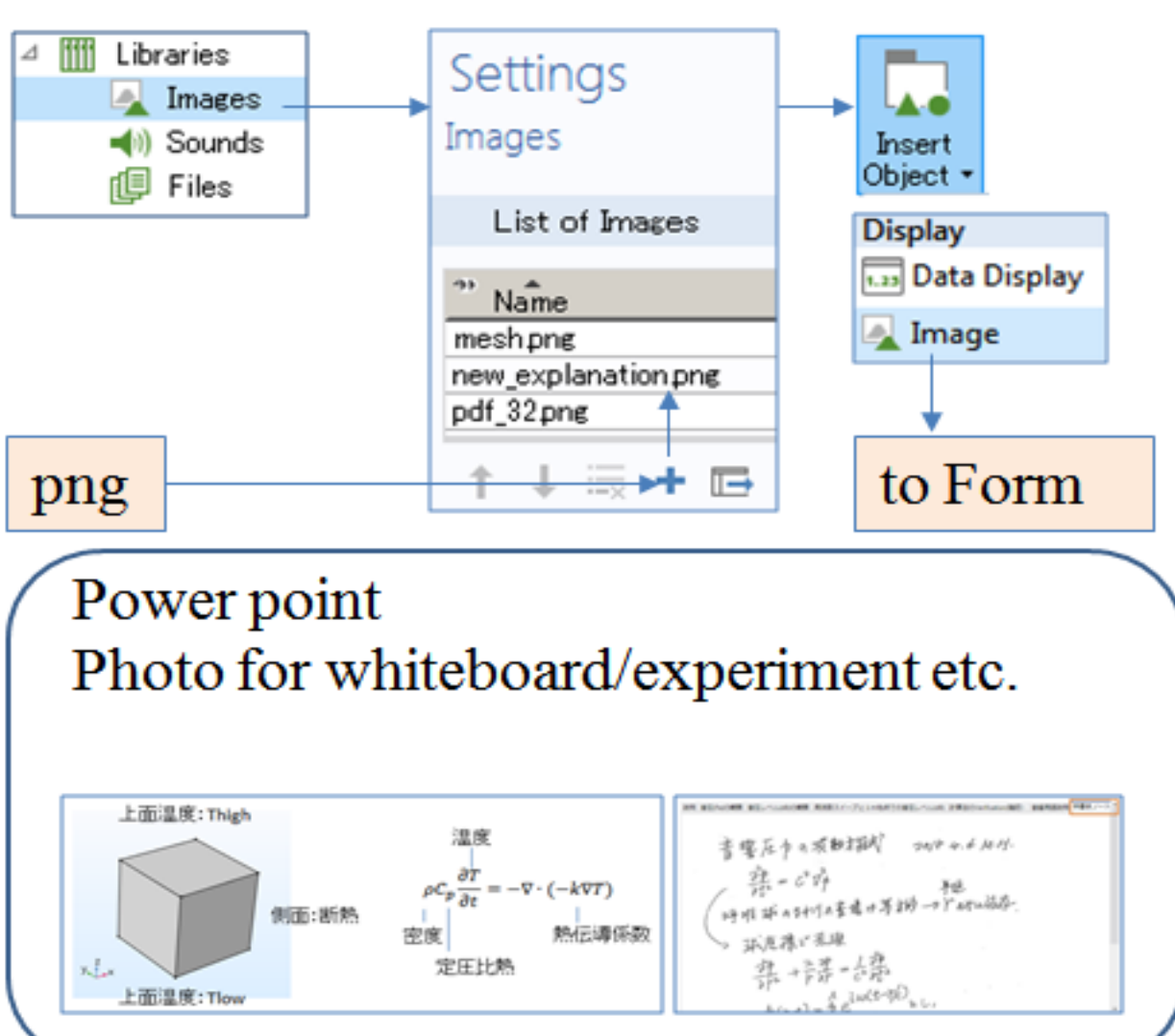
Procedure B:

Construct Apps with input fields and boundary selections for What If-analysis.



Procedure C:

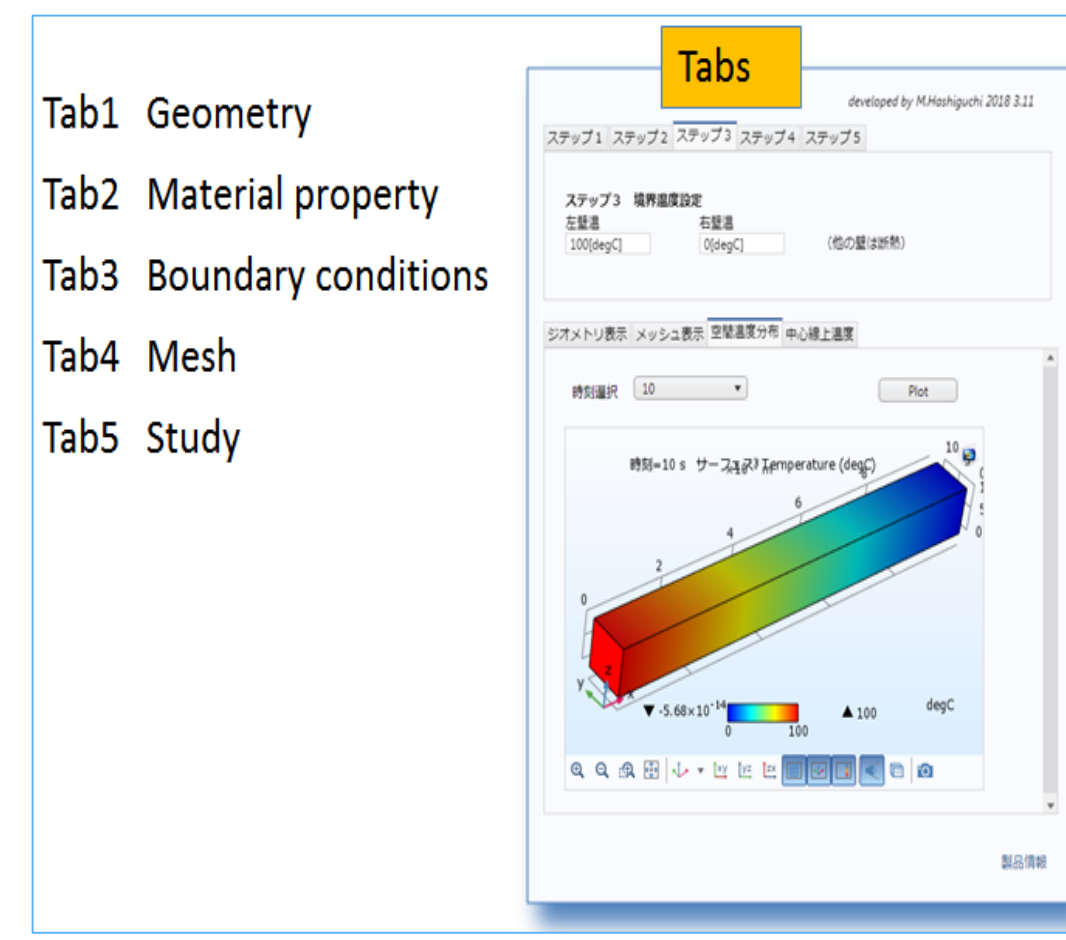
Construct Apps with images for explanation how to use Apps or study on Apps.



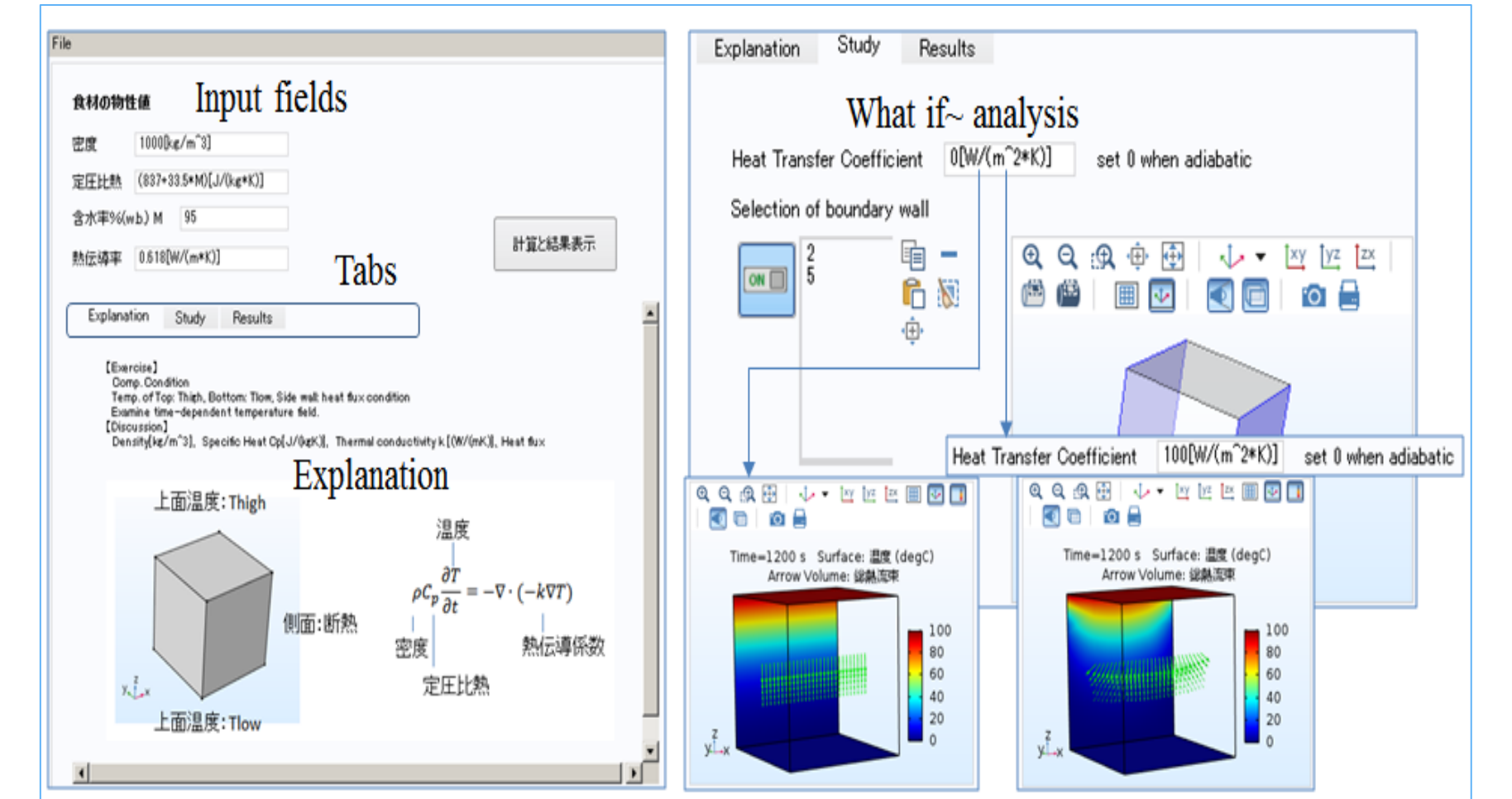
Applications and discussions

Education for classroom of University

CAE sequence



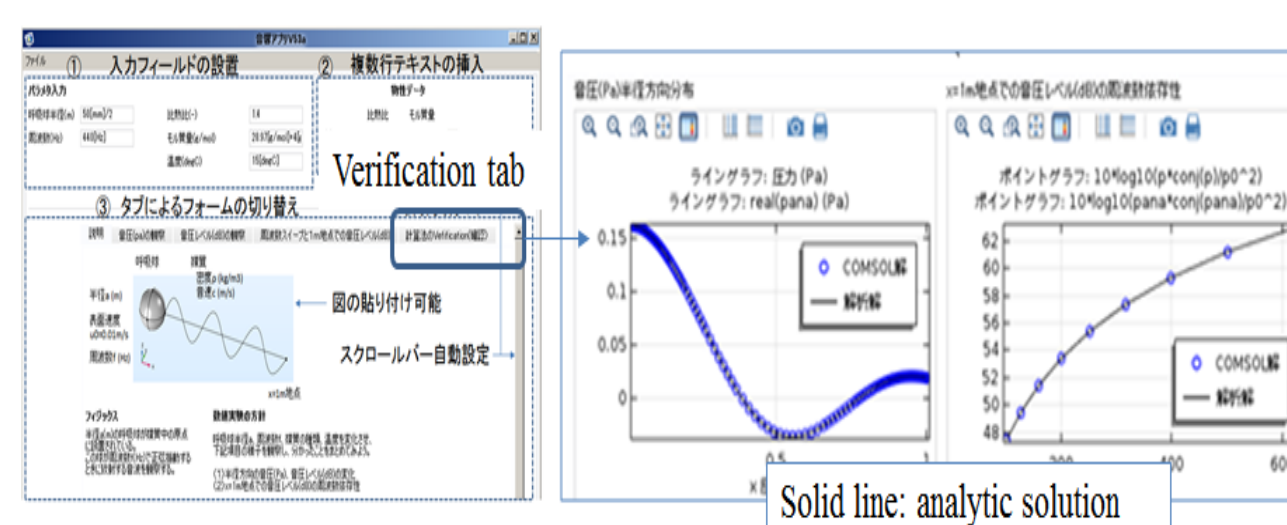
Heat transfer and heat flux vectors



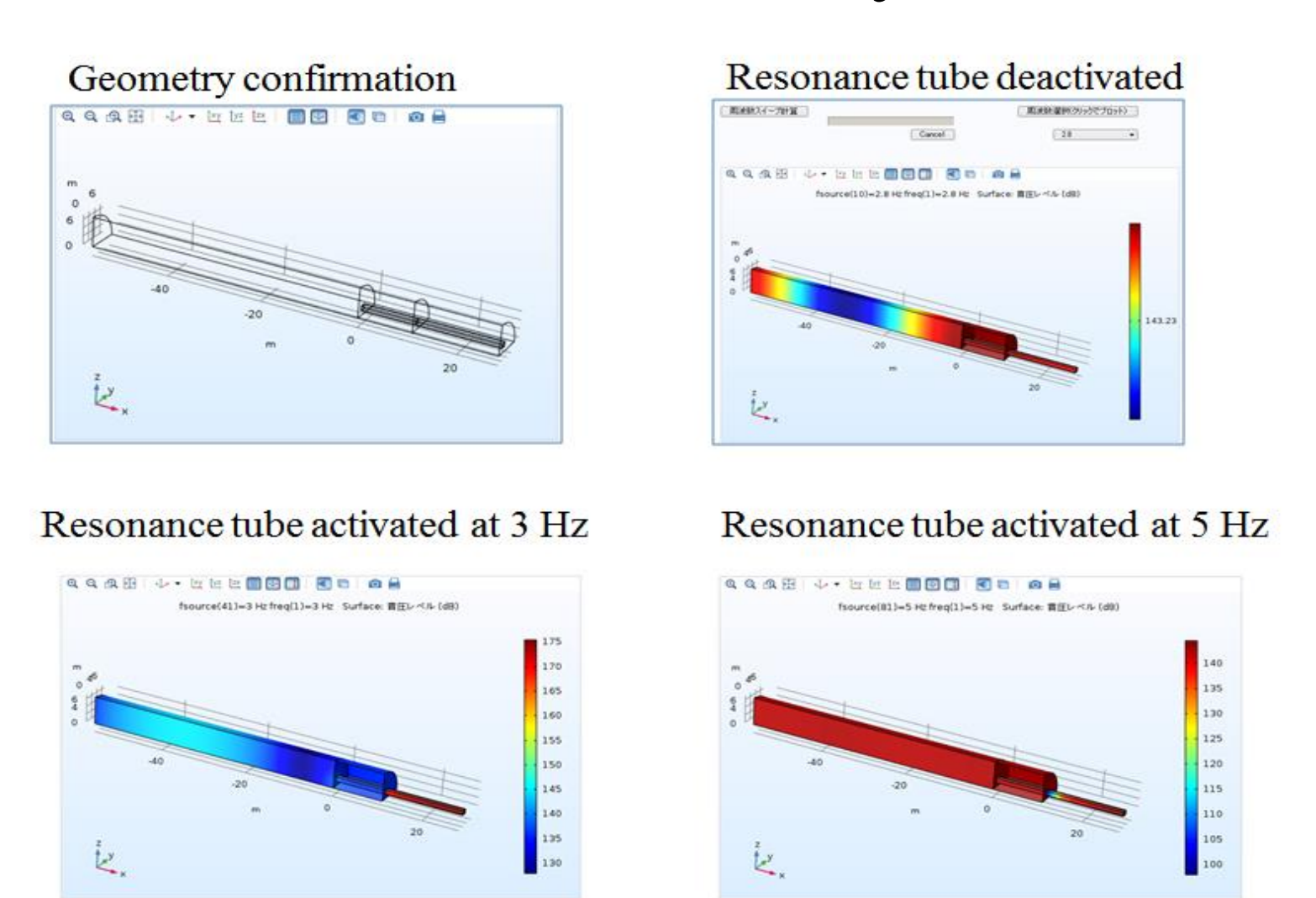
Activity in-company (KESCO) to innovate business style by referring pressure acoustics

Education for V&V activity

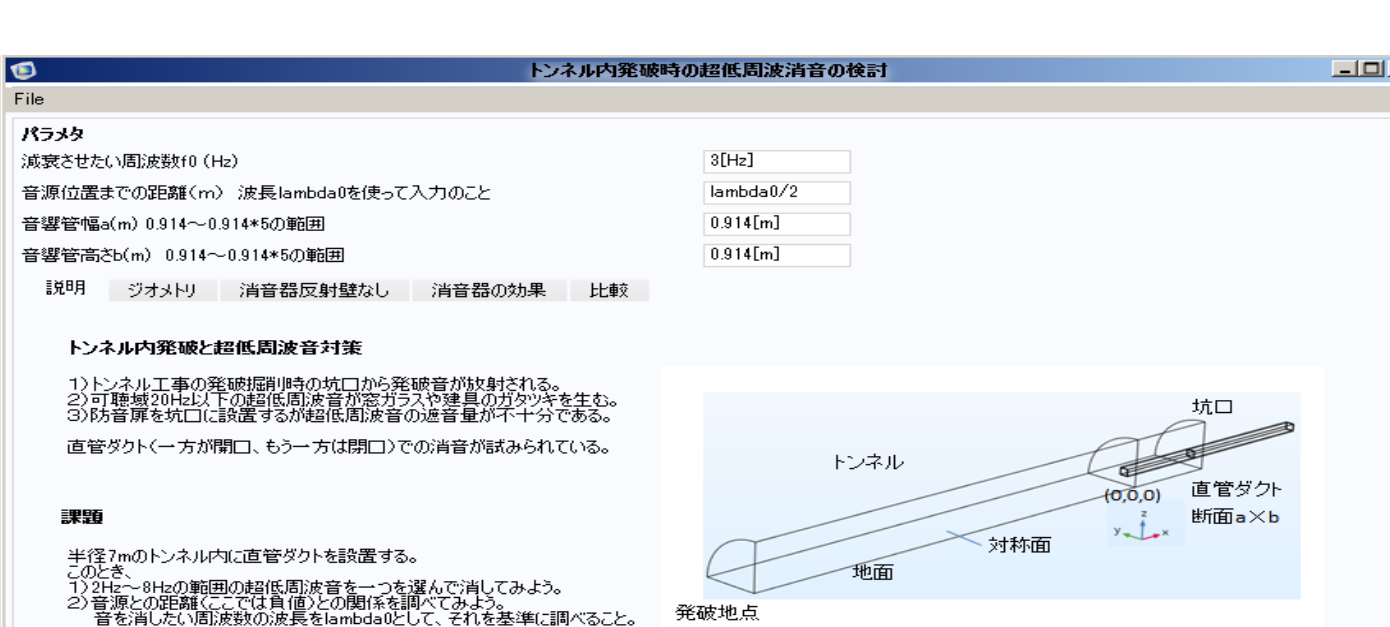
How to verify computation



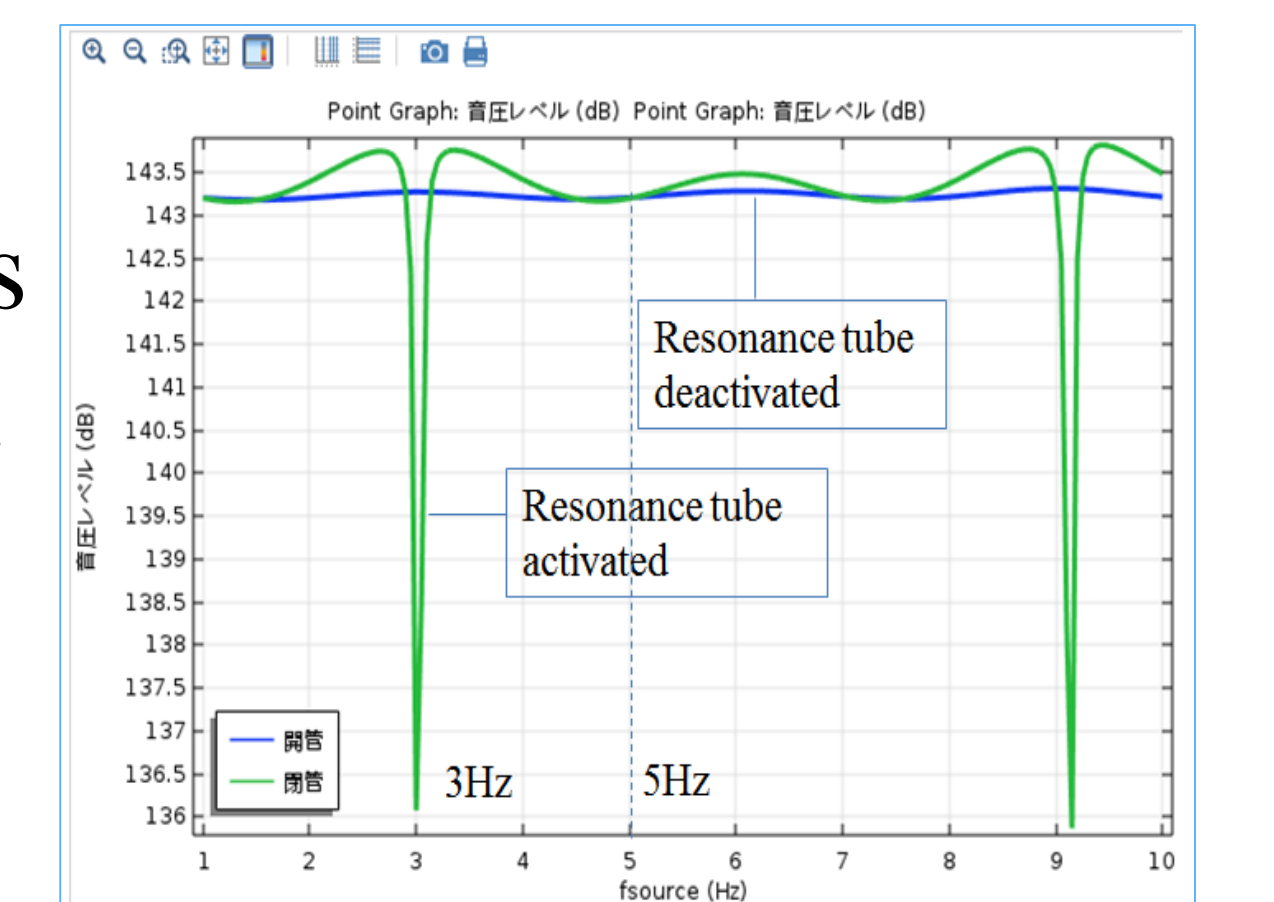
What if -analysis



How to validate computation



Education for sales persons with Apps and Server in KESCO seminar room.



Concluding remarks

In this paper, we proposed the simplest procedure for making Apps and exemplified some Apps based on the procedure proposed here.

It was found that the Apps developed here proved the effectiveness of our procedure when making Apps and we can innovate the style in both education and relating business when coupling Apps and Server, in particular, R&D could be assisted, accelerated and solidified based on feedback from various people who use Apps, including sales people as well as engineers.

References

- (1) Application Builder Reference Manual of COMSOL Multiphysics, Ver.5.3a.
- (2) Naoki Takano, Research and education of computational mechanics using COMSOL Multiphysics & Application Builder, COMSOL Conference 2017 Tokyo, 2017.
- (3) Masanori Hashiguchi and Dahai Mi, Development of Appli for Teaching and Research in Physics, Proc. of the conf. on computational engineering and science, 2018.
- (4) Yasuyuki Iwane et. al., Development and Practical Application of Blasting Infrasound Reducer "TBI Resonator Type-F", https://www.tobishima.co.jp/laboratory/technique/pdf/65/gihou_65-2017-07.pdf