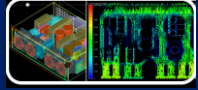


# I need **CFD experts to prepare (easy) MODELS like electronics cooling**

<http://www.cognitor.com.br/CFDexperts.pdf>

If you wish to present results using a test made in laboratory, it is also good. My interest are the results.



by **Sergio Feitoza Costa**

## 1. What I need

I am a designer of electrical equipment and author of the (non-CFD) simulation software SwitchgearDesign. Now, 68 yo. I develop ideas and concepts of sound examples for reducing the waste of materials in the electric power industry. I do this to contribute to Earth environmental issues. In the end you may read several free technical articles written by me and my C.V.

I am now doing calculations for which the tool I developed is not sufficient. For these new tasks I need to use CFD software tools (computational fluid dynamics) but do not have time available to develop the models, as I did in the past. There are great free and not-free CFD tools, as the examples in this link

<https://www.cfd-online.com/Wiki/Codes>

I AM LOOKING FOR PEOPLE ABLE TO PREPARE FROM HOME, CFD MODELS, specified by me, using “Windows like” software, preferably of free use. I will pay for the service and provide a clear technical description of what I need. Software tools which use only DOS commands are not of my interest. Only Windows and the easier the interface the best for me because I will use the models alone after. It does not matter if the expert is experienced or not because I will orientate all the work. In fact, behind these model preparation services there is the intention to identify a small group of experts for the near future development of a complex R&D project in the field of Green Hydrogen

## 2. The sequence of the work

All the work is private. Our contact will be only through the e-mail [sergiofeitozacosta@gmail.com](mailto:sergiofeitozacosta@gmail.com).

If you are interested in receiving the invitation calls to do a quote for the model's preparation (example below) send me an e-mail including your clear contact data. It will be only for my own use and never disclosed. In the first contact write some few lines about your experience with CFD models and type of software you are able to use.

The more common sequence of the work is:

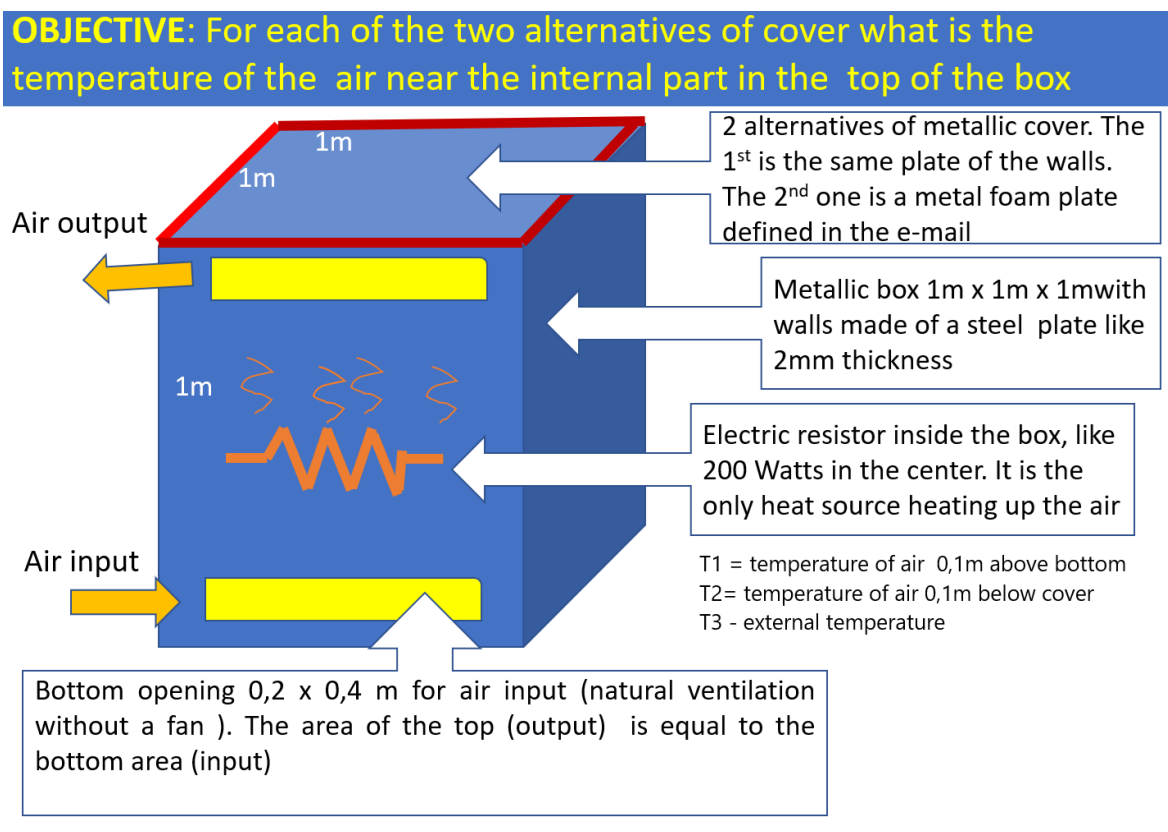
- (a) I write the specification of the model I need and send via e-mail to the experts that are in my list. The specification is more or less equal to the one in next section. If you are interested but need clarifications just write me back
- (b) If you are interested write me informing the total price of the service and delivery time to prepare.
- (c) In few days I will select the expert to do the work and will give details about payments for the service
- (d) I will send to the expert which will do the simulation more details and send a kind of template for a short report of results.
- (e) THE FINAL PRODUCT I need to receive are the “SolidWorks format” files and the “tool simulation files”. The idea is that after I receive the product I will use the model alone, for example to change input data for new calculations. It is essential that the simulation is prepared with a free use tool.
- (f) After service is ready and received, I will pay you immediately, preferably via PayPal. You may suggest other ways if easier to you.

## 3. The first simulation model I need.

The objective of the simulation is like the problems of electronics cooling. There is a single closed metallic box 1m x 1m x 1m inside a room with a stable temperature. Inside the box there is a source of heat (an electric resistor dissipating around 200 Watts). There is a rectangular hole 0,2m(h) x 0,4m (w) near the bottom plate, without filter. There is another equal hole near the top . The cover (2 alternative types). The air enters naturally from the bottom hole and leave from the top hole. In the alternative with metal foam cover, a part of the air arriving to the cover goes through and comes out on top . The objective of the experiment is to estimate for each of the 2 alternatives of cover , the values of the air temperatures T1 and T2 .

About ventilation there are also two alternatives to calculate. The first one is that there is no fan in the bottom hole (natural ventilation). The will flow slowly from the bottom (colder) to the top of the box (hotter). The second one is that there will be in the bottom a small fan which will provoke and average air speed of 0,5m/s in the bottom hole.

I do not need big precision of the results because I know more or less well the results to expect from tests already done. More than the model parameters, a short explanation of the method equations is welcome but not mandatory.



#### 4. Publications

If publications are done that use the model made, I will explicitly give mention the credits of the author of the model as well as its CV. As I have more than 25.000 followers in LinkedIn, most from the electric industry, this can be good for young experts looking for job positions.

////////////////////////////////////  
The author of this short article is Mr. Sergio Feitoza Costa.

Sergio is an electrical engineer, M. Sc in Power Systems, and director of COGNITOR. Sergio is a designer from switchgear panels to complete big testing high power, high voltage, and other testing laboratories.

- Free Downloads area: <http://www.cognitor.com.br/Downloads1.html>
- Curriculum <https://www.cognitor.com.br/Curriculum.html>