**Questions:**

* Is it possible to set a threshold like the CO2 level should be less than 400ppm in CONTAM? How can I do that!?
* Energy consumption? How to calculate that?

**CONTAM software:**

This software could be integrated with E+ and works in command window

* It is very easy and straightforward to run from command window

There is a great tutorial for this software in this [link](https://www.nist.gov/el/energy-and-environment-division-73200/nist-multizone-modeling/contam-video-tutorials)

Also, there is a great tutorial and discussion about the faTIMA, a smaller version for a single zone building in this [link](https://www.youtube.com/watch?v=tkzy1qFqyJM&t=353s)

Also, there is a [google group](https://groups.google.com/u/1/a/list.nist.gov/g/contam?hl=en) that Stuart answers the questions regarding CONTAM.

Some points that I didn’t know:

* Walls, floors, and roof have infiltration in the connections, and we need to consider these elements
* FaTIMA is for 24 hour simulations
* Don’t worry about the exact value of contaminations, you need to work on that proportionally
* You can define and modify schedules
* It does not account for temperature controlling

Developing a model for a single zone building based on [this video](https://www.youtube.com/watch?v=pxiHdrDuYiE)

* In this video, they assume window and doors as a potential of airflow
  + I highly doubt that the walls and floor could infiltrated the air

Steps for co-simulation between EP and CONTAM:

I have added an HVAC system to the CONTAM model by using open studio. I need to revise the exported energyplus model by CONTAM3DExport and revise HVAC and windows. The co-simulation framework can be done by editing the texts.

Creating a predictive model of CONTAM:

I want to create a predictive model of CONTAM. This model can help us to formulate an optimization formulation between IAQ, thermal comfort, and energy consumption/energy cost. Here could be the potential formulation for that:

Since we are using conditioned air, we need to calculate the optimal value of injected air to the room.

Creating a model based on airflow in CONTAM:

I have been trying to create a predictive grey box model in CONTAM to investigate the association of airflow and contamination in a simple room model.

Check air filter

add sourse?

Why converging?

|  |
| --- |
| CONTAM co-sim |
| Add window |
| Repair HVAC system |
| Add indoor air flow EP |
| Co-simulation framework |