



# SUPERDATORA (HPC) PIELIETOJUMA PIEMĒRI

Latvijas HPC kompetences centrs  
2023. gada 27. jūnijs



# Siltronic AG, Vācija

## Silīcija kristālu audzēšanas modelēšana

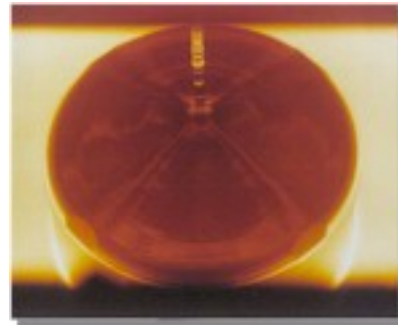


Skaitliskās  
modelēšanas  
institūts

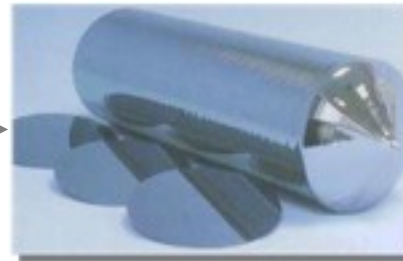
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kristāls

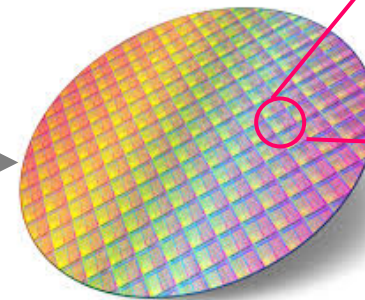
kausējums



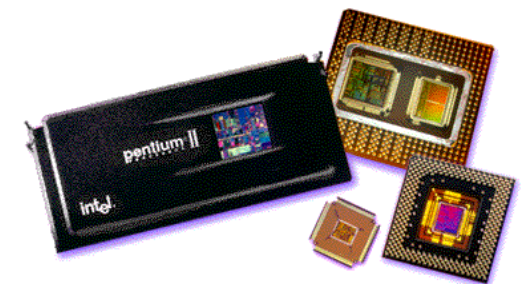
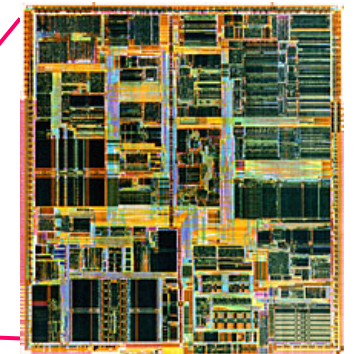
Single Silicon  
Crystal Growth



Wafer  
Preparation

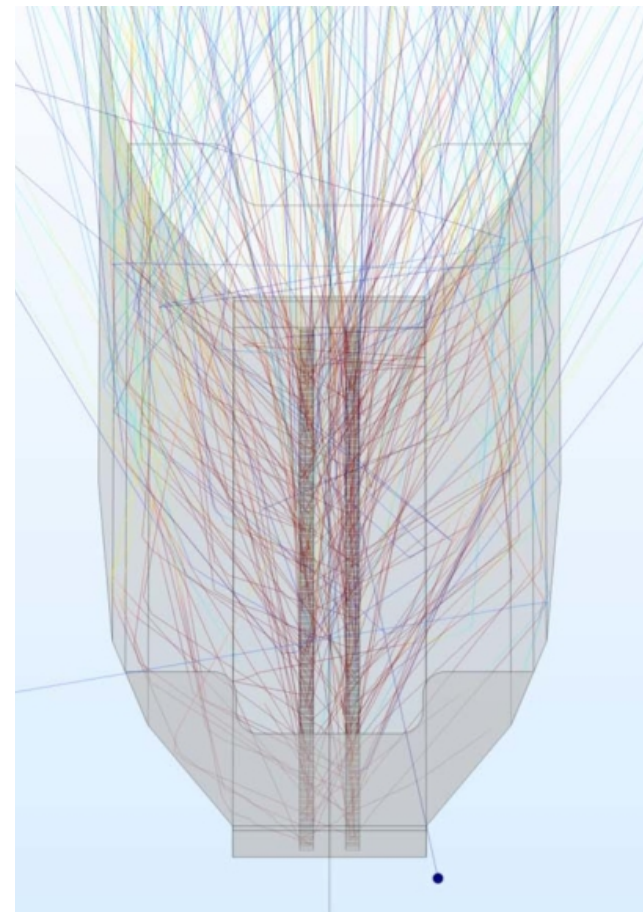
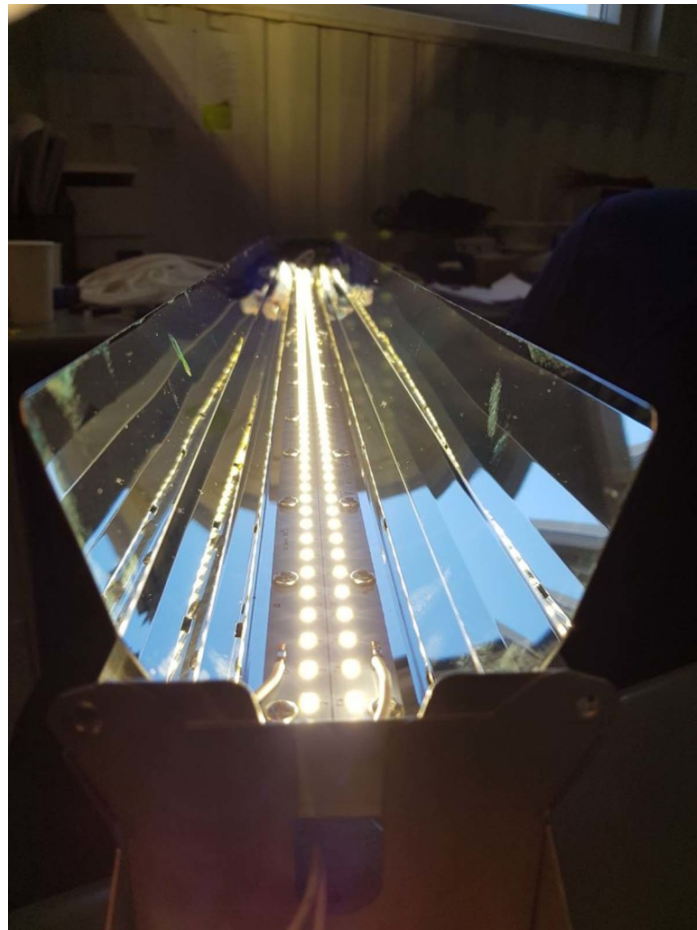


Device  
Fabrication



## Apgaismojuma intensitātes sadalījuma modelēšana

Staru izsekošanas modeļu izstrāde rūpnieciskajiem gaismekļiem un telpiskā apgaismojuma sadalījumu optimizācijas modeļu izveide





## Bringing fracture treatment to the 21st century

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# Exact Knowledge. Discovered Fast.

ARTIFICIAL INTELLIGENCE DRIVEN ENGINE THAT  
ACCELERATES R&D PROCESSES IN LIFE SCIENCE INDUSTRY

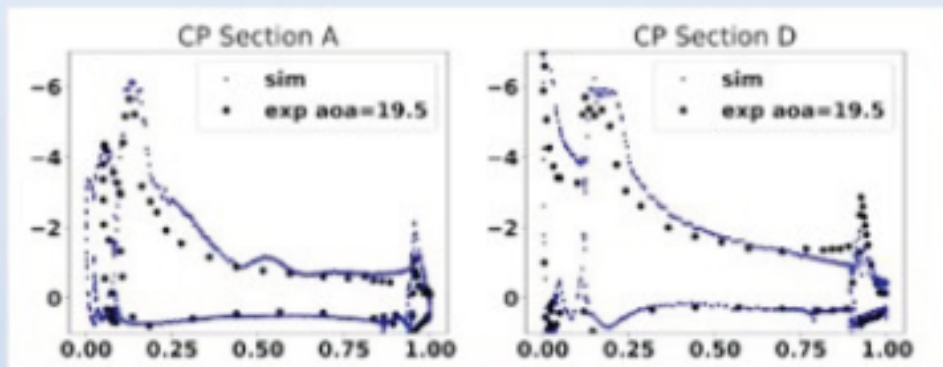
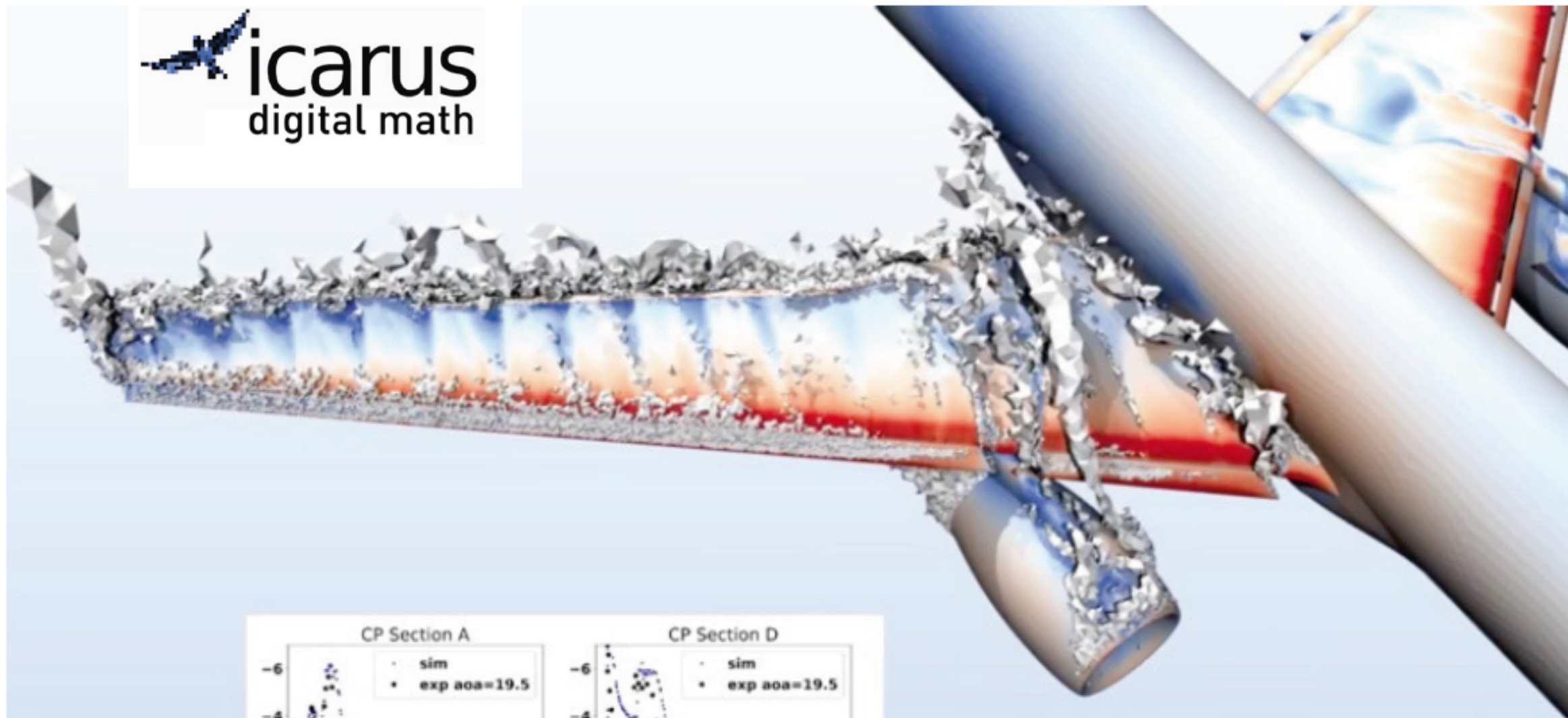
EXPLORE MORE

## THE SOLUTION

Our AI-driven IP Intelligence Engine enables scientists & IP experts to search, analyze and extract complex knowledge on chemical-biological interactions allowing them to spot the information they are looking for within more than **83%** of the time required with current technologies.

The Engine is built on a State-of-the-art AI technology set combining Natural Language Processing + Machine Learning + Full linguistic data analysis + Chemical structure processing & Image Recognition, delivering novel ways by integrating two languages: chemical structure and words, into a single semantic meaning.

It is first industry-level solution for automatic information extraction and data curation in pharmacology and biochemistry.









JIN: I AM WORRIED ABOUT THE CRIME AROUND HERE.

# Introducing ChatGPT

We've trained a model called ChatGPT which interacts in a conversational way. The dialogue format makes it possible for ChatGPT to answer followup questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests.

[Try ChatGPT](#)[Read about ChatGPT Plus](#)



## HPC Competence Centre of Latvia

Group ID: 10367423 

Group for the HPC demo-case Git repositories, developed for the National HPC Competence Centre of Latvia.


































**Subgroups and projects**

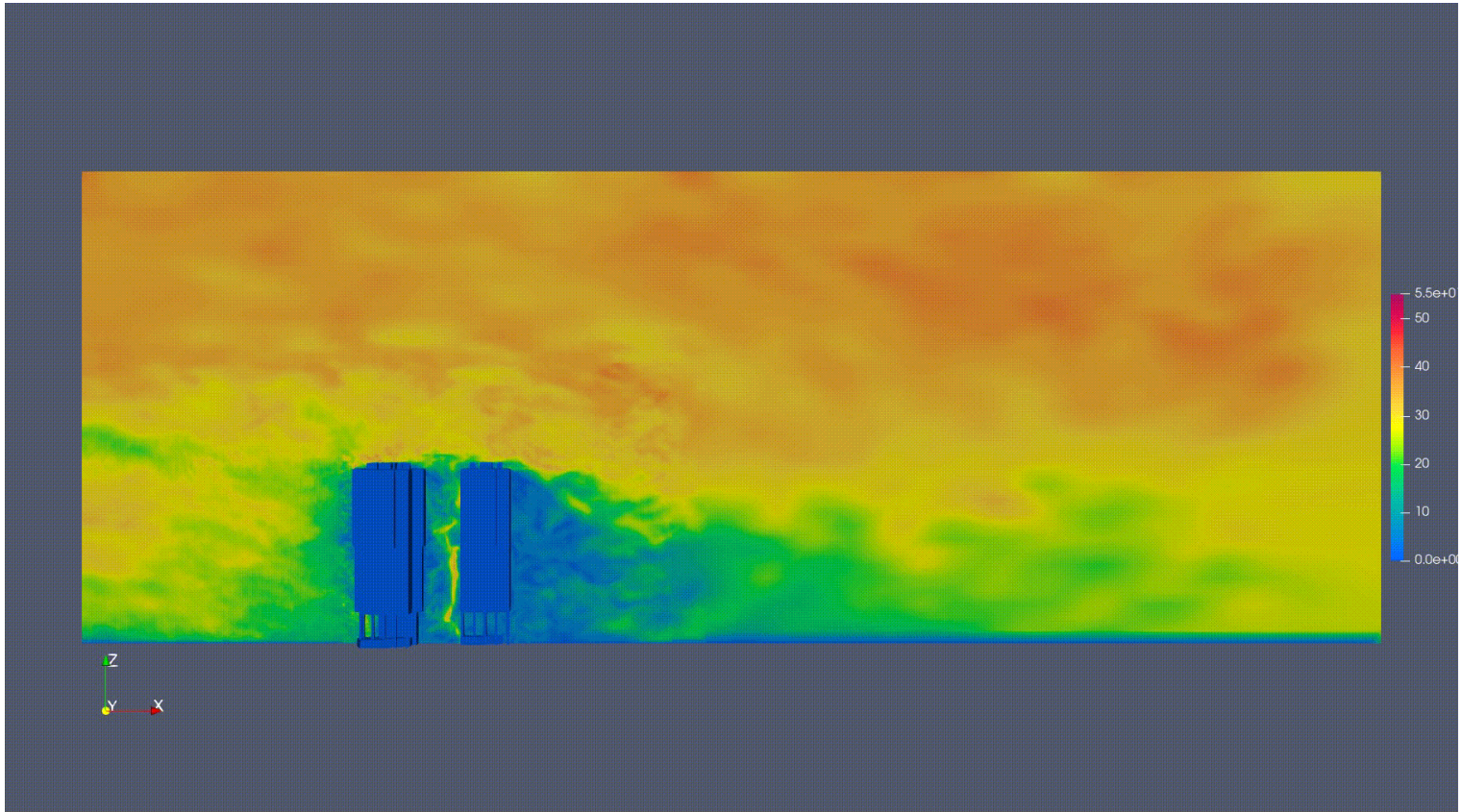
Shared projects

Archived projects

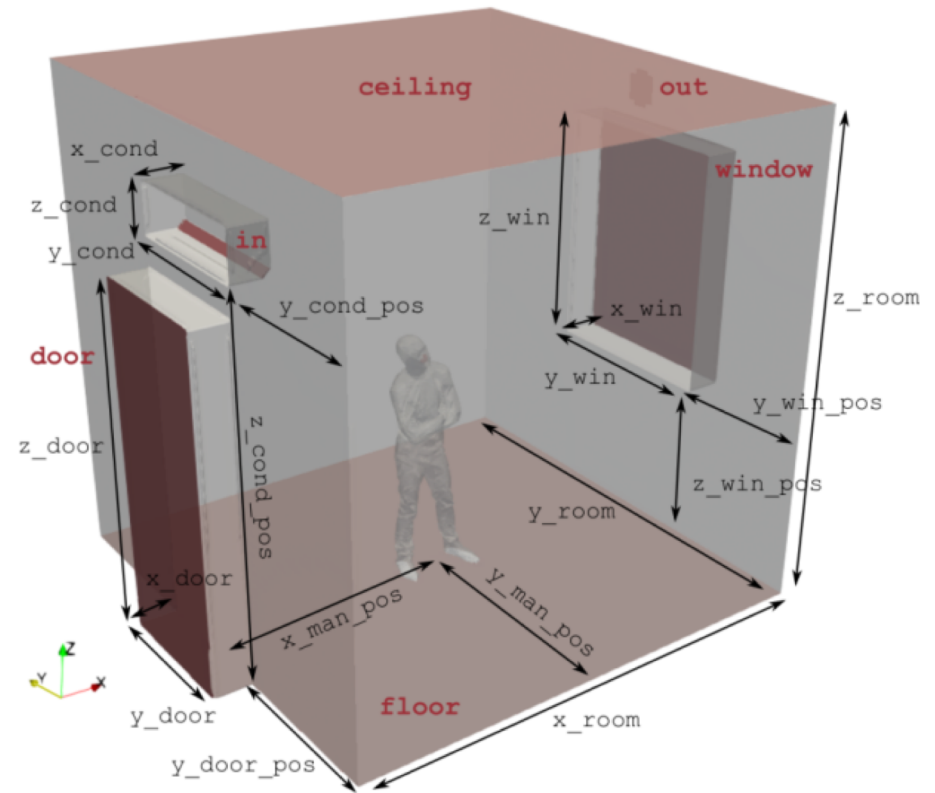
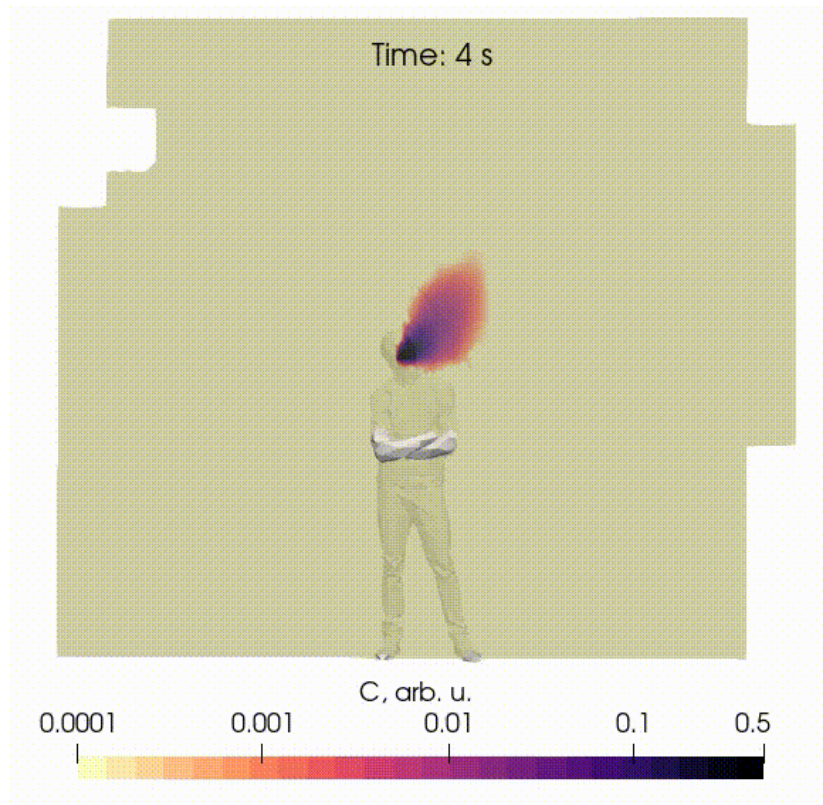
Search by name

Name 

	 <b>Assessment of Wind Loads Using HPC</b> 	★ 0	4 months ago
<hr/>			
	 <b>Building Management System AI Model</b> 	★ 0	10 months ago
<hr/>			
	 <b>Dielectric Constant Measurement Uncertainty Estimation using HPC</b> 	★ 0	9 months ago
<hr/>			
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	 <b>Metal Casting HPC Model</b> 	★ 0	4 weeks ago
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	 <b>Microchannel Flow in a Heated Plate</b> 	★ 0	5 months ago
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	 <b>Oceanographic HPDA</b> 	★ 0	1 year ago
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	 <b>Room Thermal Comfort and Epidemiological Safety</b> 	★ 0	7 months ago
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	 <b>Seasonal Weather Forecast HPDA</b> 	★ 0	1 year ago



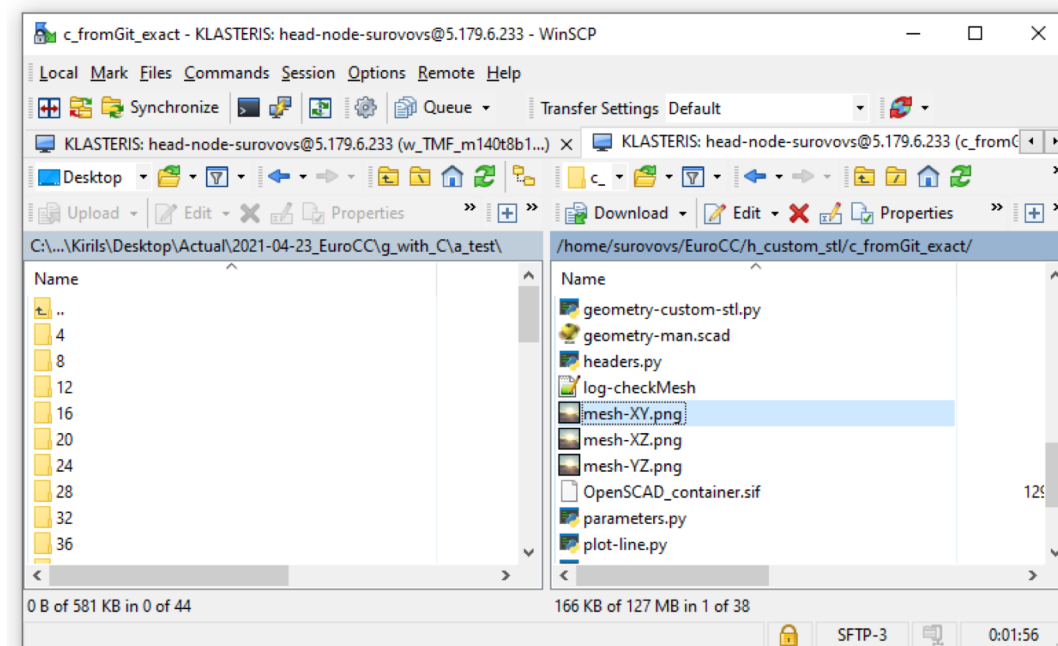
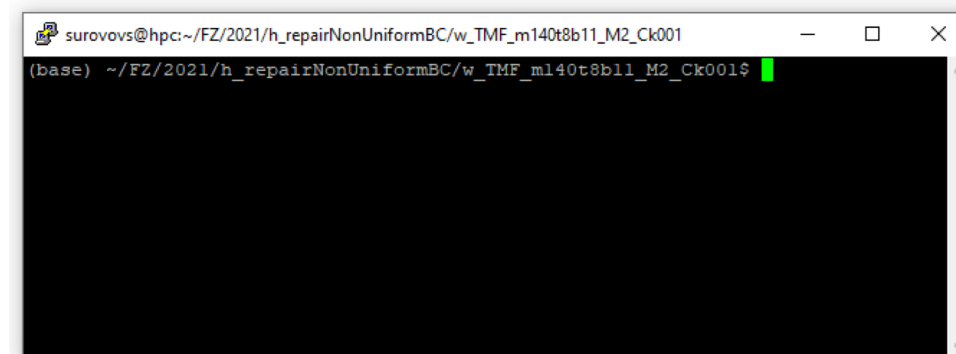
Vēja slodžu novērtējuma HPC piemērs



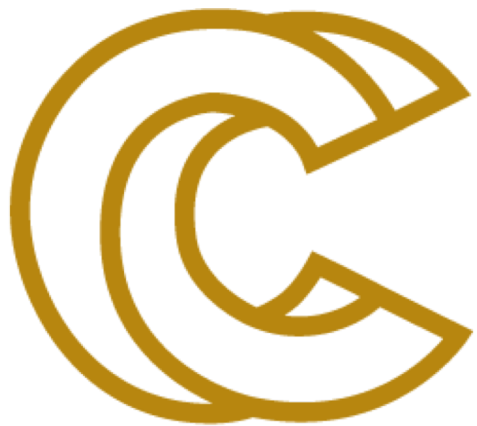
Aerosola (COVID19) izplatības telpā HPC aprēķins

# Piemēra izmantošana: soli pa solim

- Jāiegūst LU HPC klastera lietošanas tiesības (lietotājvārds, parole), rakstot administratoram [hpc@lu.lv](mailto:hpc@lu.lv)
- Jāpieslēdzas klasterim, uzinstalējot un atverot savā datorā šādas programmas: [PuTTY](#) (lai izpildītu komandas komandrindā) un [WinSCP](#) (lai aplūkotu rezultātu failus)
- Jāatver aprēķinu piemērs <https://gitlab.com/eurocc-latvia/room-model> un rūpīgi jāseko instrukcijām\*:
  - [Running the case on an HPC cluster](#)
    - [Obtaining the case](#)
    - [Preparation of the environment](#)
    - [Mesh generation](#)
    - [Preparation of boundary conditions](#)
    - [Running quasi-stationary air flow simulation](#)
    - [Running transient simulation of aerosol concentration](#)
- Jāapskatās/jānokopē rezultāti ar WinSCP programmu



\* instrukcijas ir pieejamas arī YouTube pamācības formā: <https://youtu.be/Mf0JPYAza0>



**EURO**

  
**Supers**

## **RAKSTI UZ**

[info@eurocc-latvia.lv](mailto:info@eurocc-latvia.lv)

Lai sarunātu tikšanos!

## **SEKO**

[twitter.com/EuroccLatvia](https://twitter.com/EuroccLatvia)

[facebook.com/eurocclatvia/](https://facebook.com/eurocclatvia/)

Lai ērti uzzinātu jaunumus!

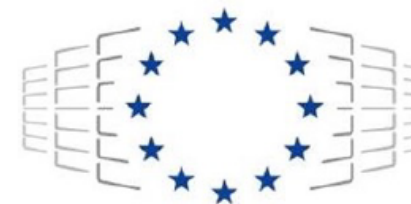
## **APMEKLĒ**

[www.eurocc-latvia.lv](http://www.eurocc-latvia.lv)

Lai uzzinātu vairāk par HPC!



# Paldies!



**EuroHPC**  
Joint Undertaking

Šis projekts ir saņēmis finansējumu no Eiropas Augstas Veiktspējas Skaitļošanas kopuzņēmuma saskaņā ar granta līgumu Nr. 101101903. Kopuzņēmums saņem atbalstu no Digitālās Eiropas programmas, kā arī no Vācijas, Bulgārijas, Austrijas, Horvātijas, Kipras, Čehijas Republikas, Dānijas, Igaunijas, Somijas, Grieķijas, Ungārijas, Īrijas, Itālijas, Lietuvas, Latvijas, Polijas, Portugāles, Rumānijas, Slovēnijas, Spānijas, Zviedrijas, Francijas, Nīderlandes, Beļģijas, Luksemburgas, Slovākijas, Norvēģijas, Turcijas, Ziemeļmaķedonijas Republikas, Islandes, Melnkalnes un Serbijas.