



Highlights – Update on the NCC Iceland
Prof. Dr. – Ing. Morris Riedel, University of Iceland

Short overview on status at start



Prof. Dr. – Ing. Morris Riedel, University of Iceland



IHPC

In operation ▾ Support Community History Acknowledgements Hafðu samband – Contact us

Community

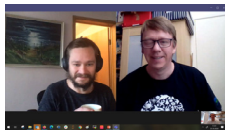
To get information regarding upgrades, downtime or some other important issues then we will send those information to users with en get those information then please sign up. This is not used very regularly so don't worry about getting spammed through this list and or mailing list can send to it.

[IHPC mailing list](#)

To get information to HPC admins, then please send an email to help@hi.is and include HPC in the subject.

This page is managed by Rhinet and RHI

[1] IHPC Community

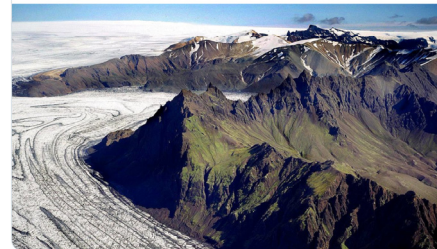


The University of Iceland is one of the six best universities in the world in the field of remote sensing!

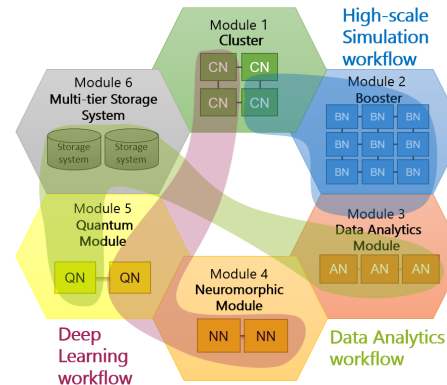
Háskóli Íslands @Haskoli_Islands · Aug 14

Háskóli Íslands er í 6. sæti yfir fremstu háskóla heims á sviði fjarkönnunar samkvæmt hinum virta Shanghai-lista. Skólinn er enn fremur í hópi hundrað bestu háskólanna innan jarðvísinda. Frábærar fréttir fyrir starfsmenn, stúdenta og samfélagið allt!

hi.is/frettir/haskol...



7:40 PM · Aug 15, 2019 · Twitter for iPhone



DEEP Projects



[4] DEEP Series of Projects Web Page



What has happened

 Prof. Dr. – Ing. Morris Riedel, University of Iceland



Icelandic National Infrastructure for HPC

- ❖ HPC hardware funds by RANNIS; now via roadmap IReiP
- ❖ Proposals yearly required to obtain funds still
- ❖ Joint proposal from IHPC community



EuroHPC LUMI Supercomputer in Finland

- ❖ Supercomputer funded by Finland, Belgium, Czech Republic, Denmark, Estonia, Iceland, Norway, Poland, Sweden, Switzerland
- ❖ Co-Funds by EC and Iceland participation funds from: UoIceland, UoReykjavik, and Hannes Jonsson & Egill Skulason



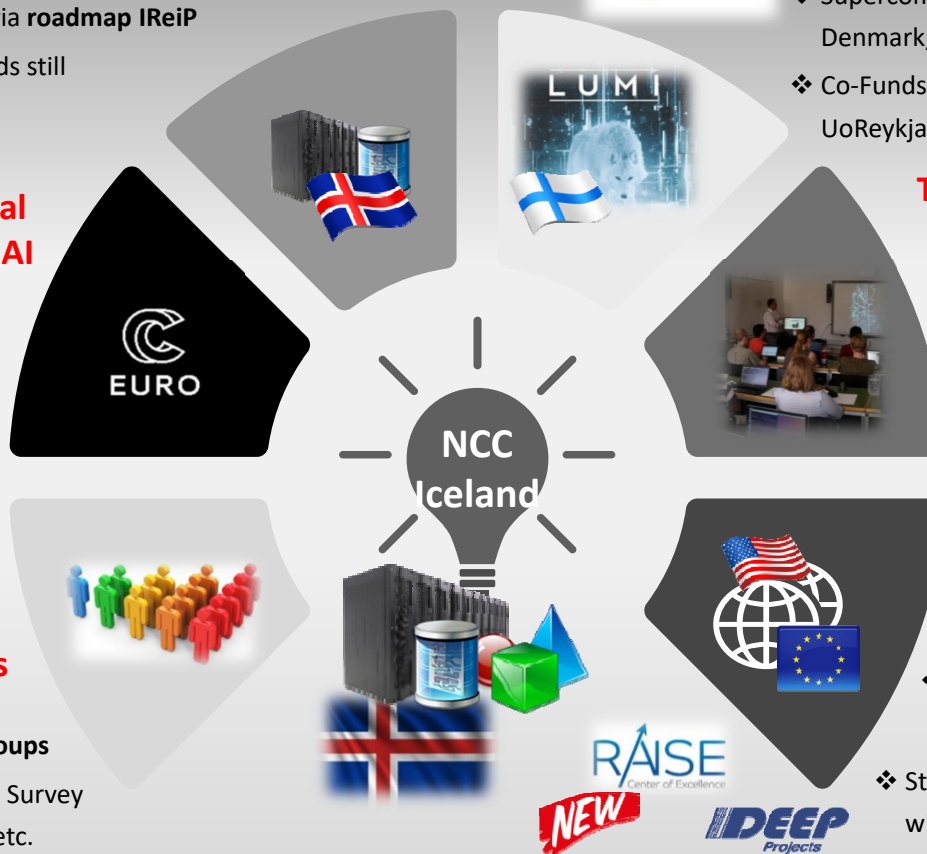
EuroHPC EuroCC National Competence Center for HPC & AI

- ❖ EU Project (09/2019-08/2021), 2 years
- ❖ Building **Simulation and Data Labs (SDLs)** of the IHPC Community of Users
- ❖ Supports industry engagement in HPC



IHPC Community of Users

- ❖ Organized around RANNIS proposals
- ❖ ~53 scientific experts & research groups
- ❖ UoIceland/UoReykjavik, Iceland Geo Survey ÍSOR, Met Office & industry: Matis, etc.



Teaching & Education in HPC & AI

- ❖ University of Reykjavik
- ❖ University of Iceland
- ❖ Arctic Webinar Series (with US partners)
- ❖ Digital/Horizon Europe MSc in HPC



HÁSKÓLI ÍSLANDS



International Cooperations

- ❖ Tactical: ~4 Joint PhDs with **Juelich Supercomputing Centre** in Germany (#1 HPC System in Europe)
- ❖ Tactical: **EC Projects** like DEEP-EST, EOSC-Nordic, RAISE Center of Excellence (CoE)
- ❖ Strategic: Plans of building an **Icelandic National Lab** with international cooperation together with Industry (e.g. Kaiser Global, other investors)



The benefit of EuroCC

 Prof. Dr. – Ing. Morris Riedel, University of Iceland



[1] Icelandic HPC Community Web page

- Simulation & Data Lab Communities
 - Get in contact w.r.t. **domain-specific topics**
- Technology Topics
 - Interest to work together w.r.t. **Modular Supercomputing & Quantum Computing**



Simulation and Data Lab Computational Chemistry

General Information

Advancement of theory and methodology for atomic scale simulations, with broad ranging applications for chemistry and physical chemistry, reaction rate theory, adsorption spectroscopy, and magnetism, to name a few.

Prof. Hannes Jonsson

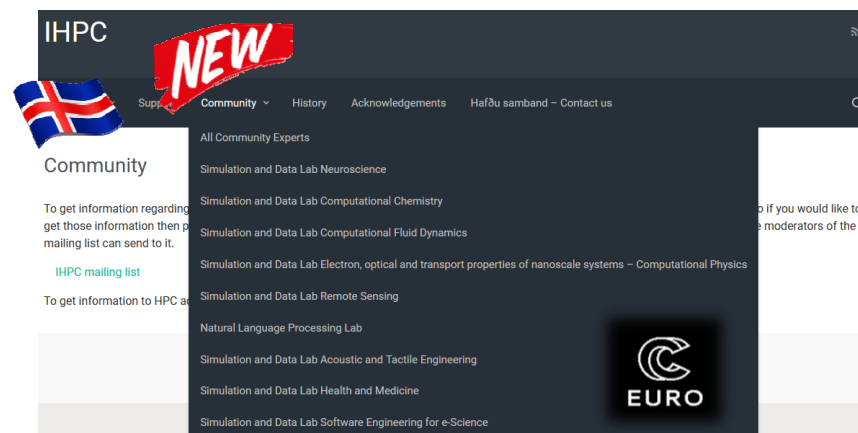
Dr. Elvar Örn Jónsson

Development of explicit polarizable classical solvent models and methodology for hybrid simulations coupling classical and quantum mechanics for the simulation of solvated molecules and the solid / liquid interface.

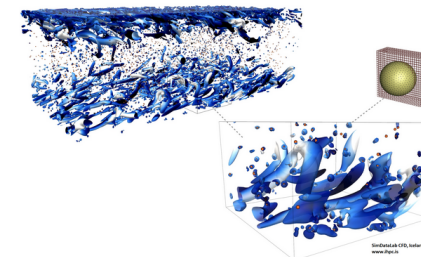
Dr. Pavel Bessarab

[3] IHPC SimDataLab Computational Chemistry Web Page

[28] Science Institute



Simulation and Data Lab Computational Fluid Dynamics



Dr. Pedro Costa



Dr. Ásdís Helgadóttir



Ph.D. Student S. Reza Hassanian, M



Prologue

[2] IHPC SimDataLab CFD Web Page

The Simulation and Data Lab computational fluid dynamics (SimDataLab CFD) is leading parallel computing in Computational fluid dynamics in Iceland at the University of Iceland. The SimDataLab is Iceland's representative in the international projects in CFD and parallel computing. SimDataLab CFD aims to develop parallel code applications in CFD and support users who have already developed parallel application codes. SimDataLab CFD participates in the European project network in parallel computing and has an infrastructure and access to powerful parallel systems in-memory optimization, processing system architecture, high scalability, and have performance optimization computer nodes.

Outlook, next step



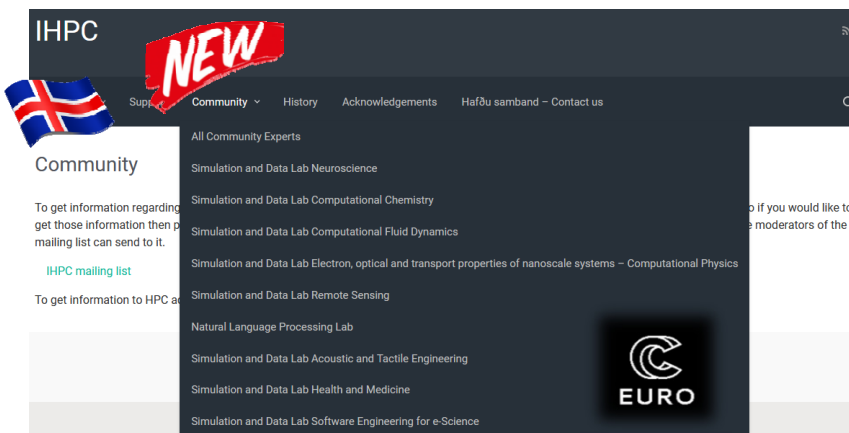
Prof. Dr. – Ing. Morris Riedel, University of Iceland



- Establish more Simulation & Data Labs
- Organize a yearly EuroCC IHPC conference
- Increase activities with industry & SME partners
- Engage in HPC-MSc Call (deadline 1.7.)



[5] RAISE Center of Excellence Web Page



[1] IHPC Community

Simulation and Data Lab Acoustic and Tactile Engineering

Acoustic and Tactile Engineering

General Information

The focus of the Acoustic and Tactile Engineering (ACUTE) lab is both on research and product development. For the last few years, our main focus has been on the development of wearable assistive devices for visually impaired persons and cochlear implant recipients. We are also working on other projects, such as solutions for delivering virtual acoustics (i.e., sounds generated by computers) as realistically as possible and on multi-channel recording/playback.

Some of our current collaborations include: Oticon Medical, DTU (Technical University of Denmark), University of Southampton and Treble technologies.

Members

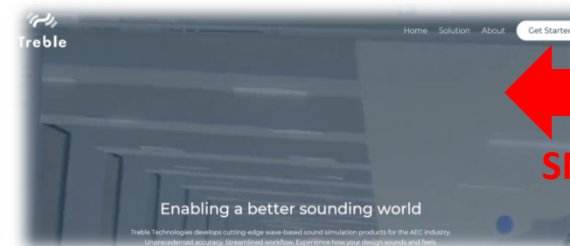
[6] IHPC SimDataLab Acoustic & Tactile Engineering Web Page



Prof. Dr. Ing. Rúnar Unnþórsson

Dr. Rúnar Unnþórsson is a Professor (100%) at the faculty of industrial engineering, Mechanical engineering, and Computer Science at the University of Iceland. Rúnar's main research interests are in performance engineering and the engineering application of acoustics / vibrations for sensory substitution, non-destructive evaluations, tactile/acoustic displays and product design.

Prof. Rúnar Unnþórsson, coordinated the 4M€ H2020 RIA project Sound of Vision (no. 643636) which was carried out in the years 2015-2017. The project received the EC's 2018 Innovation Radar Prize in the category Tech for Society for the development of an assistive device for the visually impaired. In 2017, the lab was awarded the 2nd prize for its tactile display at the University of Iceland's Science and Innovation Awards. The ACUTE lab is currently working on the development of the tactile display – with support from the Technology Development Fund (tdf.is)



SME



Dr. Ing. Finnur Pind

Dr. Ing. Finnur Pind received his MSc in acoustical engineering in 2013 from the Technical University of Denmark (DTU), and his PhD from the same institution in 2020. His PhD research was centered on virtual acoustics and was done in collaboration with the architectural studio Henning Larsen. Between his MSc and PhD studies, Finnur was an acoustic consultant in the building industry for some three years, and before entering the world of acoustics he was a software engineer in the telecom industry. His research interests include wave-based (numerical) acoustic simulations, acoustic virtual reality, room surface modeling, high-performance computing and spatial audio. He is currently a postdoctoral researcher at the ACUTE (Acoustics and Tactile Engineering) group at the University of Iceland and co-founder / CEO of Treble Technologies, which develops state-of-the-art virtual acoustics software.



Elvar Adil Árvansson worked as an electronics technician for many years, specialising in professional sound system installation. He completed his MSc degree in electrical and computer engineering at the University of Iceland in 2020, having spent time as an exchange student at the Technical University of Denmark (DTU) taking acoustical engineering courses. He is currently a PhD student in industrial engineering at the University of Iceland, working with the ACUTE group and focusing on audio-tactile integration.



References



To share with other NCCs



[1] Icelandic HPC Community, Online:

<https://ihpc.is/>

[2] Icelandic HPC Simulation and Data Lab Computational Fluid Dynamics, Online:

<https://ihpc.is/simulation-and-data-lab-computational-fluid-dynamics/>

[3] Icelandic HPC Simulation and Data Lab Computational Chemistry, Online:

<https://ihpc.is/simulation-and-data-lab-computational-chemistry/>

[4] DEEP Series of Projects Web page, Online:

<http://www.deep-projects.eu/>

[5] RAISE Center of Excellence Web Page, Online:

<https://www.coe-raise.eu/>

[6] Icelandic HPC Simulation and Data Lab Acoustic & Tactile Engineering, Online:

<https://ihpc.is/simulation-and-data-lab-acoustic-and-tactile-engineering/>



Thanks!



EuroHPC
Joint Undertaking

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