



**Seminar Hora Informaticae**

**Institute of Computer Science, Prague**

**Tuesday, May 16, 2023, 14.00 – 15.30 (2 - 3:30 PM) CET**

**Meeting room 318, Address: Pod Vodárenskou věží 2, Prague 8**

**ZOOM: <https://cesnet.zoom.us/j/95478234977?pwd=dXoyekFHbDJ0MkNrTjVVS3F2STZqUT09>**

**Meeting ID: 954 7823 4977 , Passcode: 712564**

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**Tomáš Oberhuber, Department of Mathematics, FNSPE, CTU:**

**TNL: Numerical library for modern parallel architectures.**

TNL is a collection of building blocks that facilitate the development of efficient numerical solvers and HPC algorithms. It is implemented in C++ using modern programming paradigms in order to provide a flexible and user-friendly interface similar to, for example, the C++ Standard Template Library. TNL provides native support for modern hardware architectures such as multicore CPUs, GPUs, and distributed systems, which can be managed via a unified interface. In our presentation, we will demonstrate the main features of the library together with efficiency of the implemented algorithms and data structures.

References:

[1] TNL URL: [www.tnl-project.org](http://www.tnl-project.org)

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**Tomáš Oberhuber** is an associate professor at the Faculty of Nuclear Sciences and Physical Engineering at Czech Technical University in Prague. He is a project leader of development of TNL library and he deals with medical data processing, numerical solution of nonlinear PDEs, optimization with constraints given by PDEs and development of parallel algorithms for GPUs.

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**HORA INFORMATICAЕ** (meaning: TIME FOR INFORMATICS) is a broad-spectrum scientific seminar devoted to all core areas of computer science and its interdisciplinary interfaces with other sciences and applied domains. Original contributions addressing classical and emerging topics are welcome. Founded by Jiří Wiedermann, the seminar is running since 1994 at the Institute of Computer Science of the Czech Academy of Sciences in Prague.

<https://www.cs.cas.cz/horainf>