

Large-scale and Efficient Topology Optimization Approaches

1st Thematic Session @ 6th TOP Webinar - www.top-webinar.org

October 29, 2020, Thursday, CET* (UTC+1:00) 16:00-17:30.

We are pleased to announce the program for the first thematic session on **Large-scale and efficient topology optimization (TO) approaches** at the sixth edition of the TOP Webinar (www.top-webinar.org), scheduled for October 29, 2020, Thursday, CET 16:00-17:30. The thematic session covers several sub-topics and we will hear of **Large-scale TO using high performance computing, Large-scale TO using sparse grids, efficient TO in Matlab and how to treat hundreds of millions of local constraints**. There will be plenty of time for Q&A after the presentations and we are looking forward to seeing all of you there!

* Please note this time in your time zone might be different from previous TOP Webinars, due to the transition from European daylight-saving time. For your reference, CET 16:00 on Oct 29th is 8:00 Los Angeles, 11:00 New York, 23:00 Beijing, 2:00 (+1) Sydney.

[Click here to register](#)

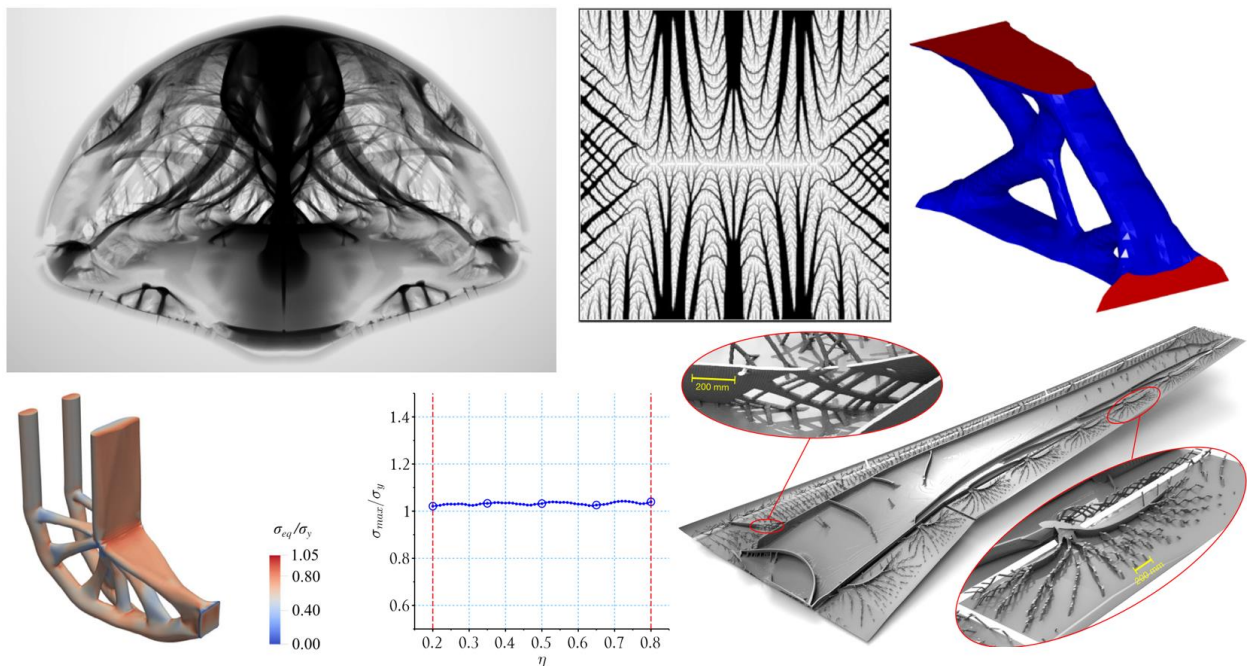


Figure 1: Illustrations covering some of the results you can expect to learn more about at the 6th TOP Webinar.

Program: October 29, 2020, Thursday, CET 16:00-17:30:

For your reference, CET 16:00 on Oct 29th is 8:00 Los Angeles, 11:00 New York, 23:00 Beijing, 2:00 (+1) Sydney

Host: [Niels Aage](#) (Technical University of Denmark)

[Dr. Boyan S. Lazarov](#) on **large-scale topology optimization using high performance computing: preconditioners**. The presentation is based on Zambrano, M., Serrano, S., **Lazarov, B. S. (Lawrence Livermore National Laboratory)**, & Galvis, J. (2020). *Fast multiscale contrast independent preconditioners for linear elastic topology optimization problems*. Retrieved from <http://arxiv.org/abs/2006.13387>

[Dr. Federico Ferrari](#) on **efficient and easily accessible Matlab code for topology optimization**. The presentation is based on **Ferrari, F. (John Hopkins University)**, & Sigmund, O. (2020). A new generation 99 line Matlab code for compliance topology optimization and its extension to 3D. *Structural and Multidisciplinary Optimization*, 62(4), 2211–2228. <https://doi.org/10.1007/s00158-020-02629-w>

[Mr. Yuanming Hu](#) on **single-computer giga-voxel topology optimization using a narrow-band sparse grid**. The presentation is based on Liu, H., **Hu, Y. (CSAIL-MIT)**, Zhu, B., Matusik, W., & Sifakis, E. (2019). Narrow-band topology optimization on a sparsely populated grid. *ACM Transactions on Graphics*, 37(6), 1–14. <https://doi.org/10.1145/3272127.3275012>

[Dr. Gustavo da Silva](#) on the **augmented Lagrangian approach for hundreds of millions of constraints**. The presentation is based on **da Silva, G. A. (University of São Paulo)**, Aage, N., Beck, A. T., & Sigmund, O. (2020). Three-dimensional manufacturing tolerant topology optimization with hundreds of millions of local stress constraints. *International Journal for Numerical Methods in Engineering*, online first. <https://doi.org/10.1002/nme.6548>

[Click here to register](#)

Best wishes,

Niels Aage, Fred van Keulen, Matthijs Langelaar, Ole Sigmund & Jun Wu