

# Enhanced ion acceleration from a non-ideal laser pulse contrast

M. Garten<sup>1,2</sup>, A. Huebl<sup>3</sup>, R. Widera<sup>1</sup>, I. Goethel<sup>1,2</sup>, L. Obst-Huebl<sup>3</sup>, T. Ziegler<sup>1,2</sup>, K. Zeil<sup>1</sup>, T. Cowan<sup>1,2</sup>, U. Schramm<sup>1,2</sup>, M. Bussmann<sup>1</sup>, T. Kluge<sup>1</sup>

<sup>1</sup> Helmholtz-Zentrum Dresden – Rossendorf, Germany

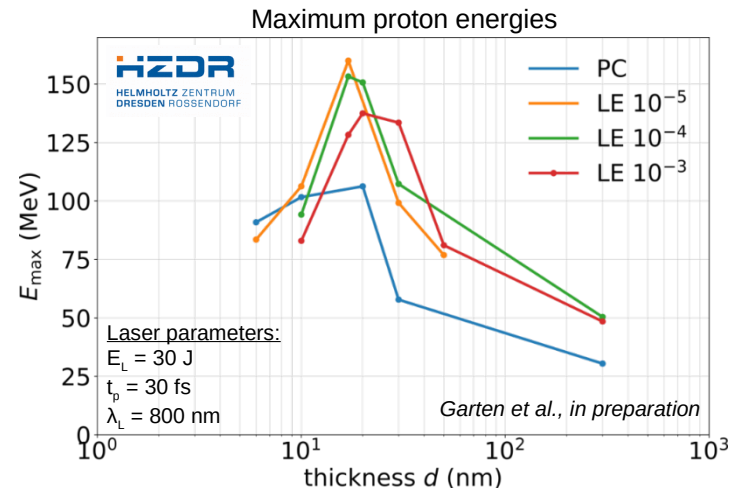
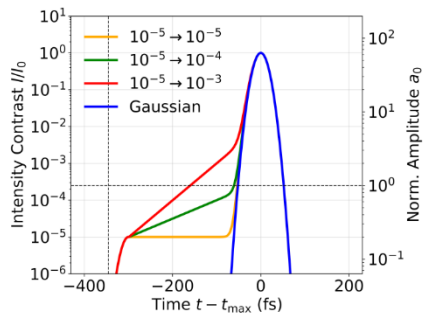
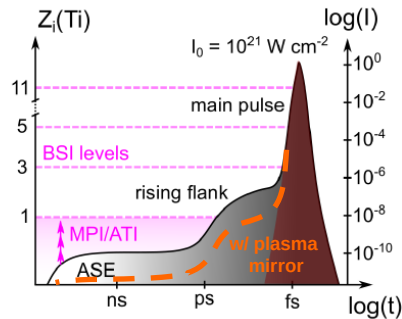
<sup>2</sup> Technische Universität Dresden, Germany

<sup>3</sup> Lawrence Berkeley National Laboratory

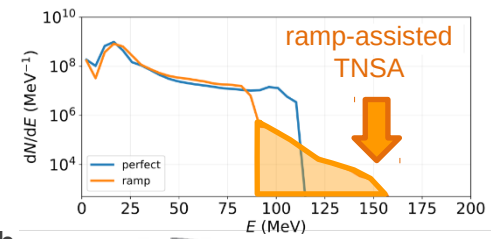
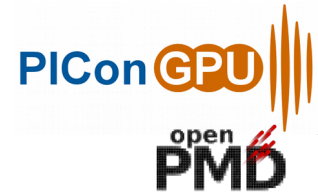


We acknowledge PRACE for awarding us access to Piz Daint at CSCS, Switzerland.  
15<sup>th</sup> PRACE call, Project ID 2016163983.

# Enhanced ion acceleration from a non-ideal laser pulse contrast



- Fully 3D, full resolution PIC simulations of influence of last ps intensity ramp on proton acc. from ~10-100nm thin metal foils
- Optimum energies observed with non-perfect laser contrast
- Harnessing full acceleration potential for protons being injected into sheath field at right place & right time



1.6 million GPUh @ 2400 GPU



# Acknowledgments

This project has been enabled by many people in open-source and open-science communities. Great thanks to the communities and developers of: PIconGPU, Jupyter, yt, the SciPy ecosystem, ADIOS, HDF5, CMake, openPMD, Spack, ...



This project has received funding from the European Unions Horizon 2020 research and innovation programme under grant agreement No 654220.



We acknowledge PRACE for awarding us access to Piz Daint at CSCS, Switzerland. 15<sup>th</sup> PRACE call, Project ID 2016163983.



**Thank you for your attention and  
thank you to the organizing committee!**

