GRAVITATIONAL WAVES

PhD students
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Conor Mow-Lowry
summer 2020
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now @ UvA & UL
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R&D
Rob Walet
Andreas Freise
summer 2020
Anna Puecher
Paul Kuijer
Sebastian Steinlechner
Enzo Tapia
Stefan Hild
Anuradha Samajdar
Haris Maliyamveettil
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Niels van Bakel
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Maria Bader
Henk-Jan Bulten
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Samaya Nissanke
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Stefan Danilishin
Laura van der Schaaf
R&D
Daniela Pascucci
Ka Wa Tsang
Pang Tsun Ho
Gideon Koekoek

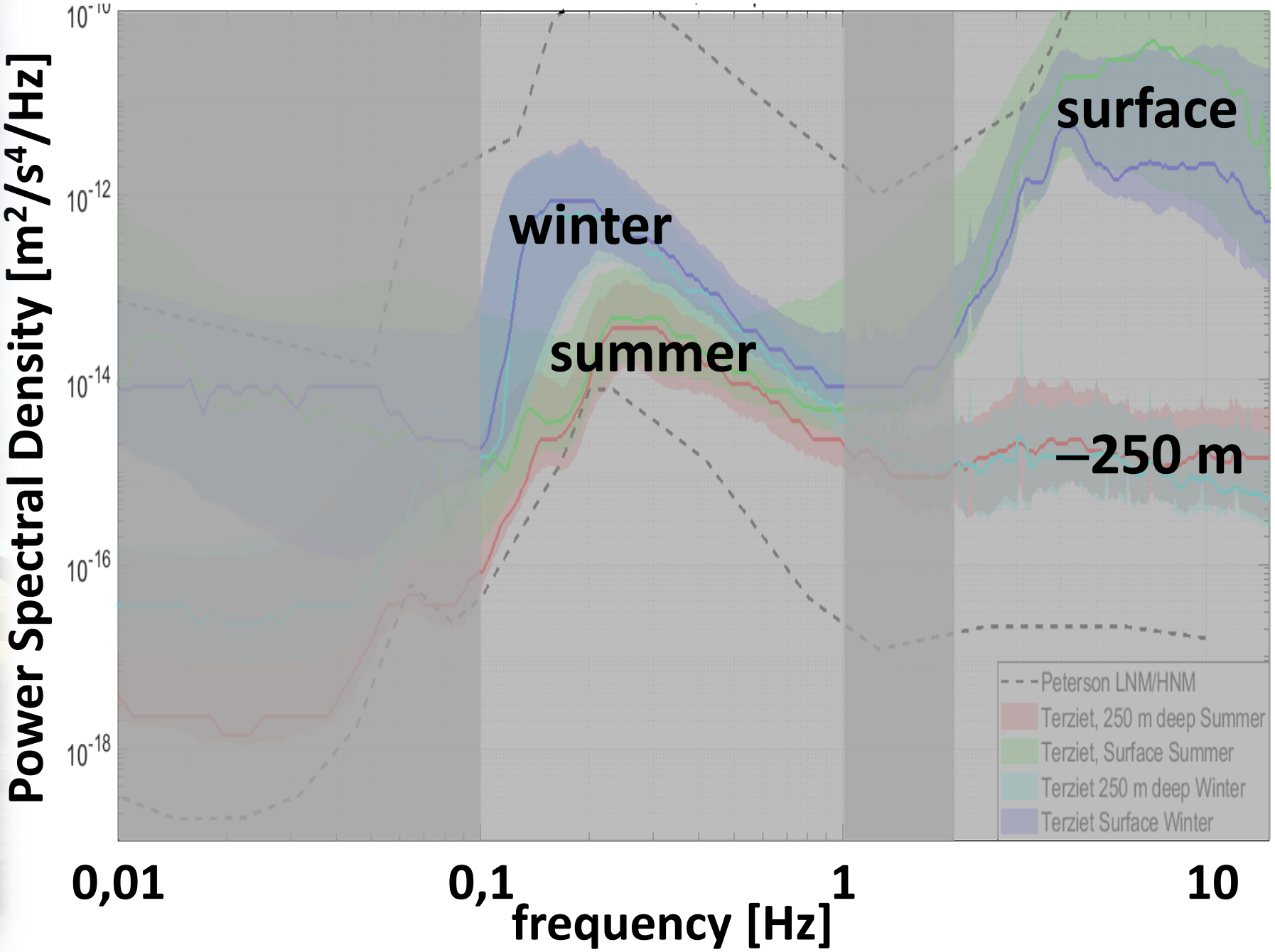
Maastricht University

Universiteit Utrecht

NWO

VU UNIVERSITY AMSTERDAM

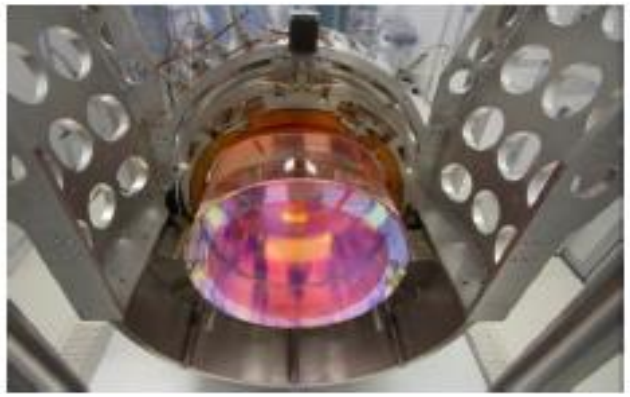
Horizontal acceleration: mode, 10th & 90th percentiles]



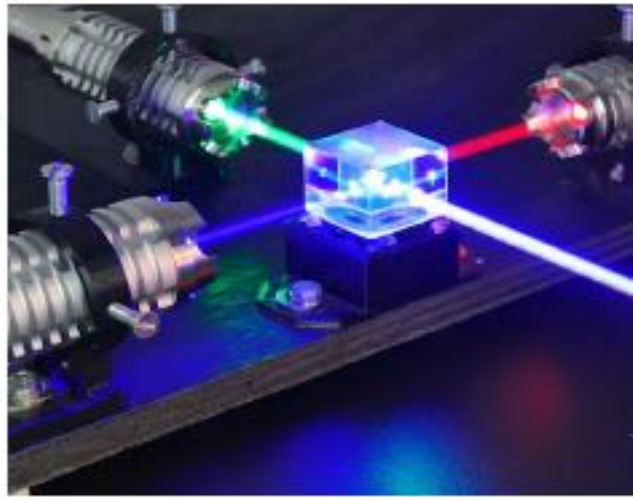
cryogenics

controls

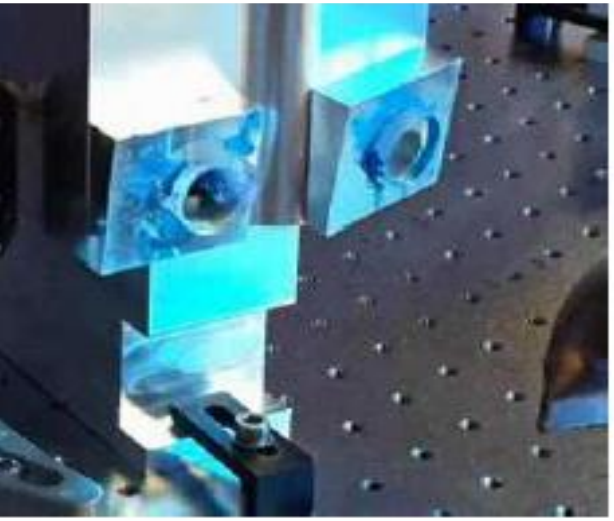
(quantum) optics



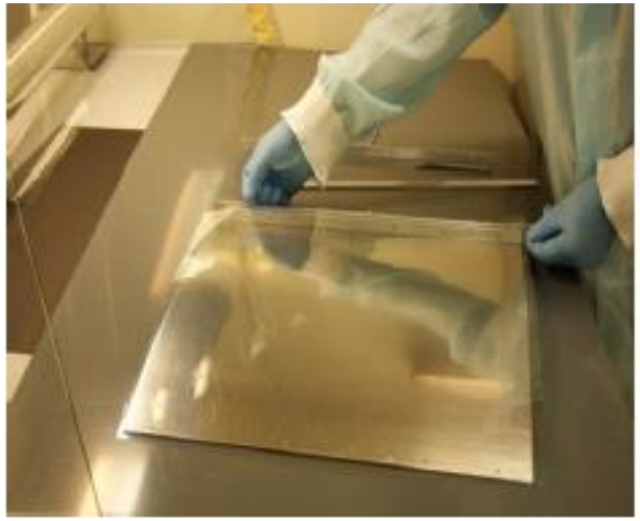
lasers



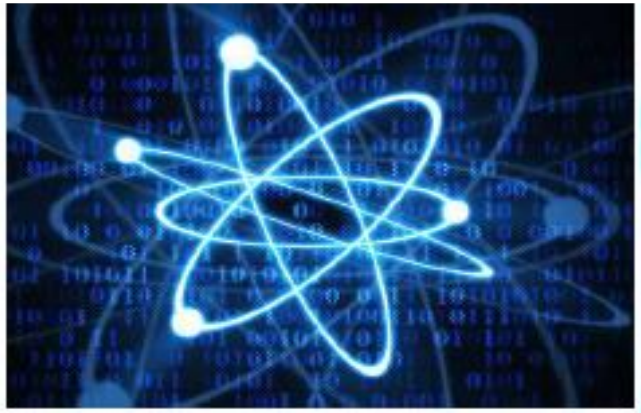
collaboration with industry – must do to get < *ET build xxx M€*



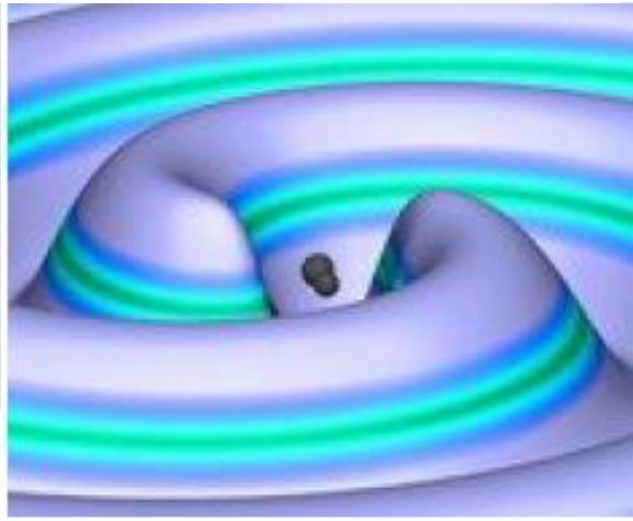
sensors



materials



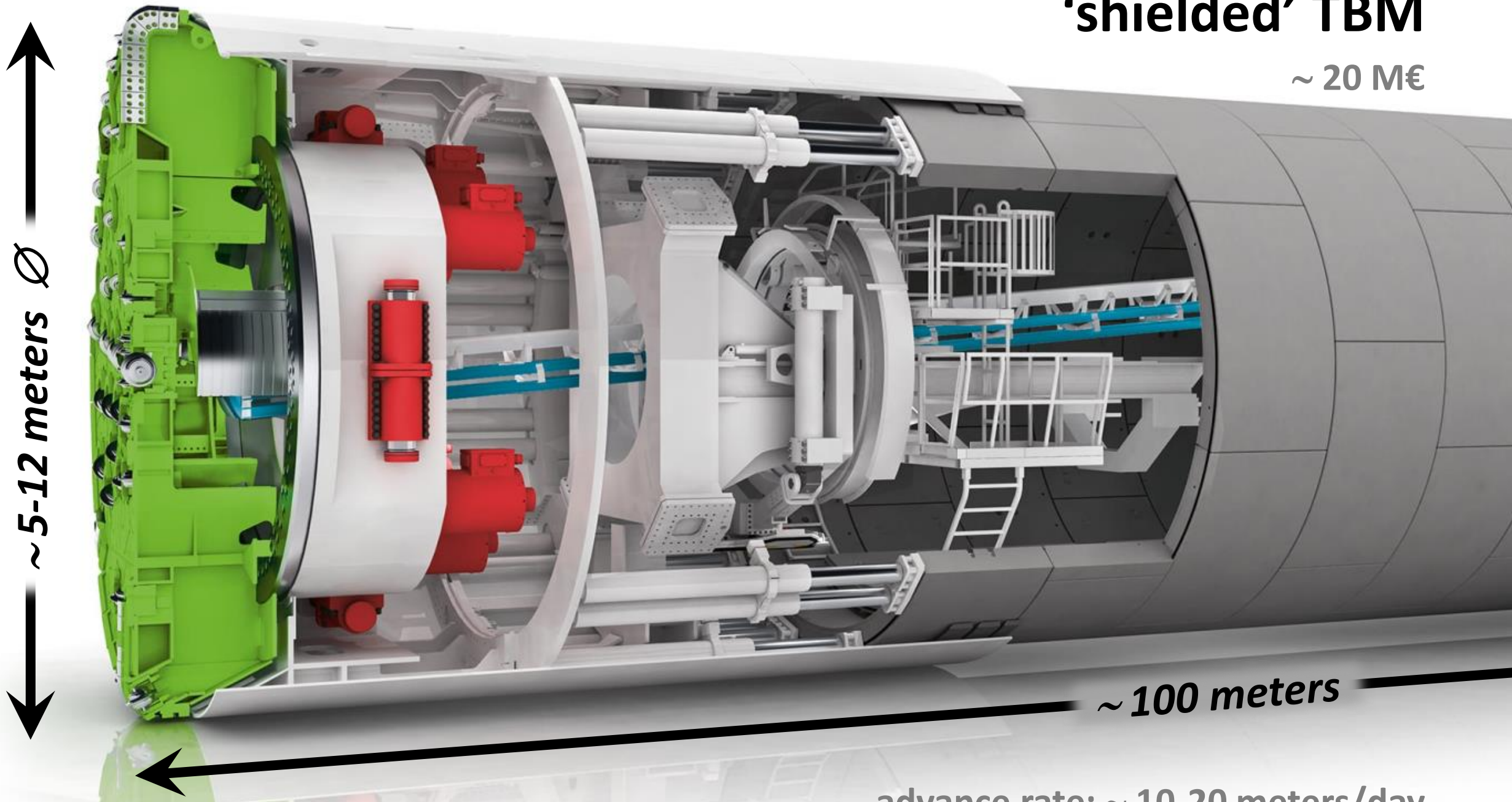
computing/ algorithms



modelling

‘shielded’ TBM

~ 20 M€



advance rate: ~ 10-20 meters/day

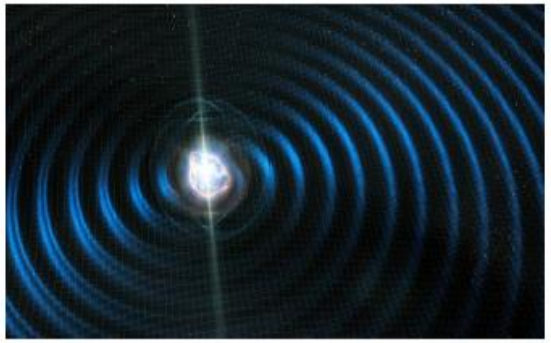

STRAP
ZEPPELIN
hier mieten
ZUBLIN
hnik

socio-economic impact

technopolis |group|

Impact assessment of the Einstein Telescope

Final report, 28/09/2018



Impact assessment of the Einstein Telescope

Final report, 28/09/2018

technopolis |group| September 2018

Joost van Barneveld
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Ivette Oomens
Geert van der Veen

www.technopolis-group.com

November-2018

1st seismic @ depth

SEISMIC CHARACTERIZATION OF THE EUREGIO MEUSE-RHINE IN VIEW OF EINSTEIN TELESCOPE

11 September 2019

First results of seismic studies of the Belgian-Dutch-German site for Einstein Telescope

Soumen Koley[1], Maria Bader[1], Alessandro Bertolini[1], Jo van den Brand[1,2,3], Henk Jan Bulten[1,3], Frank Linde[1,4], Bas Swinkels[1], Bjorn Vink[5]

1. Nikhef, National Institute for Subatomic Physics, Amsterdam, The Netherlands
2. Maastricht University, Maastricht, The Netherlands
3. VU University Amsterdam, Amsterdam, The Netherlands
4. University of Amsterdam, Amsterdam, The Netherlands
5. Antea Group, Maastricht, The Netherlands

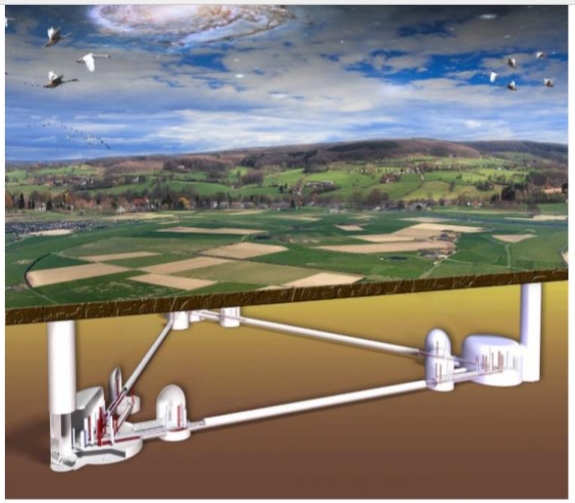


Figure 1: Artist impression of the Einstein Telescope gravitational wave observatory situated at a depth of 200-300 meters in the Euregio Meuse-Rhine landscape. The triangular topology with 10 kilometers long arms allows for the installation of multiple so-called laser interferometers. Each of which can detect ripples in the fabric of space-time – the unique signature of a gravitational wave – as minute relative movements of the mirrors hanging at the bottom of the red and white towers indicated in the illustration at the corners of the triangle.

September-2019

civil engineering study

Implenia

Scope of work for the Civil Engineering Scan for Einstein Telescope

Client
Clients
Prof. dr. Frank Linde, Nikhef, Sciencepark 105, 1098 XG Amsterdam, The Netherlands
Prof. dr.Andreas Freise, Birmingham University, Birmingham, UK
Prof. dr.Harald Lück, Albert-Einstein-Institute, Hannover, Germany
Prof. dr.Stefan Hild, Maastricht University, Maastricht, The Netherlands
Ir. Martijn Rumpen, Province of Limburg, Limburglaan 1, Maastricht, The Netherlands

Date / Version
25. November 2019 / 02

November-2019

ESFRI application

European Strategy Forum on Research Infrastructures ESFRI

Strategy Report on Research Infrastructures

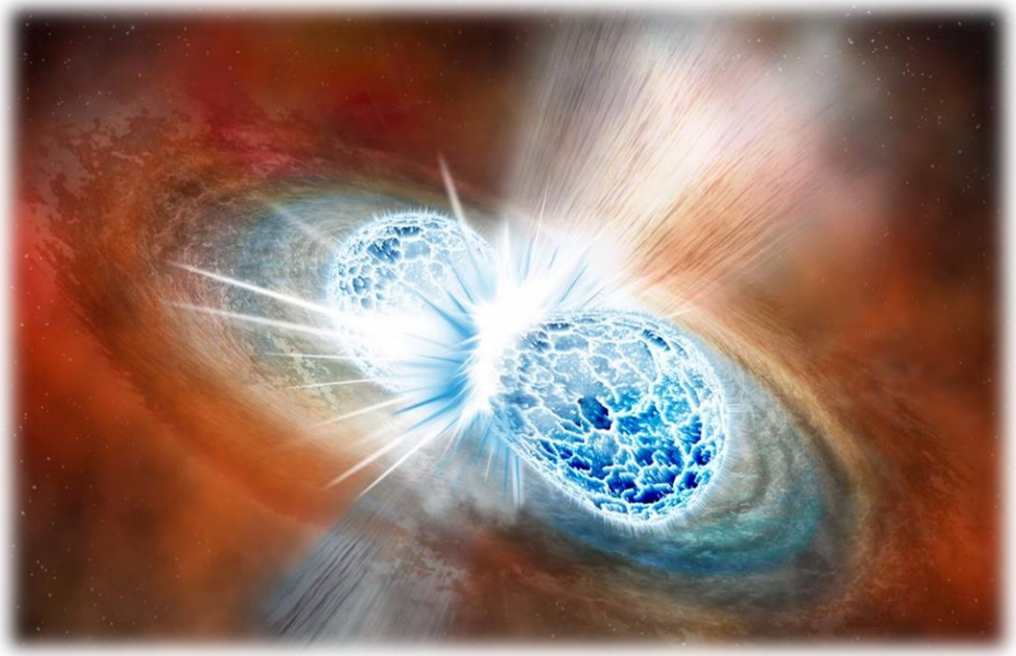
ROADMAP 2021

Proposal Submission Questionnaire

25th September 2019

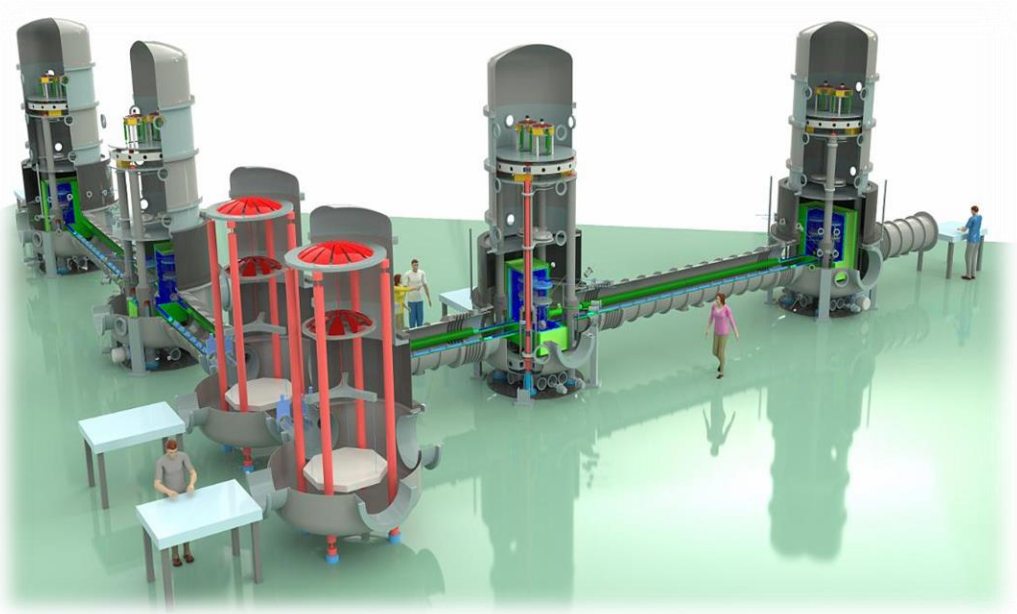
EINSTEIN TELESCOPE

May-2020?



Jo van den Brand

Gravitational-wave science with LIGO and Virgo



Stefan Hild

Einstein Telescope and ETpathfinder