Karlsruhe Institute of Technology

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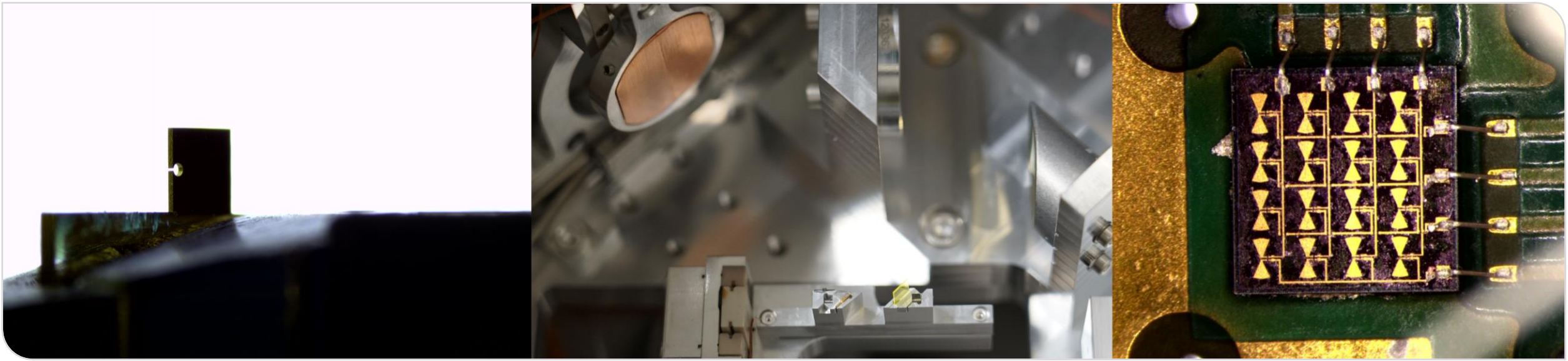
Commissioning and Experiments with a Compact Transverse Deflecting System at FLUTE

M. Nabinger for the Compact-TDS collaboration



Compact Transverse Deflecting System (Compact-TDS)

- Current experiment at FLUTE (low-energy section)
- Experimental goal: Measurement of longitudinal bunch profile on a fs scale

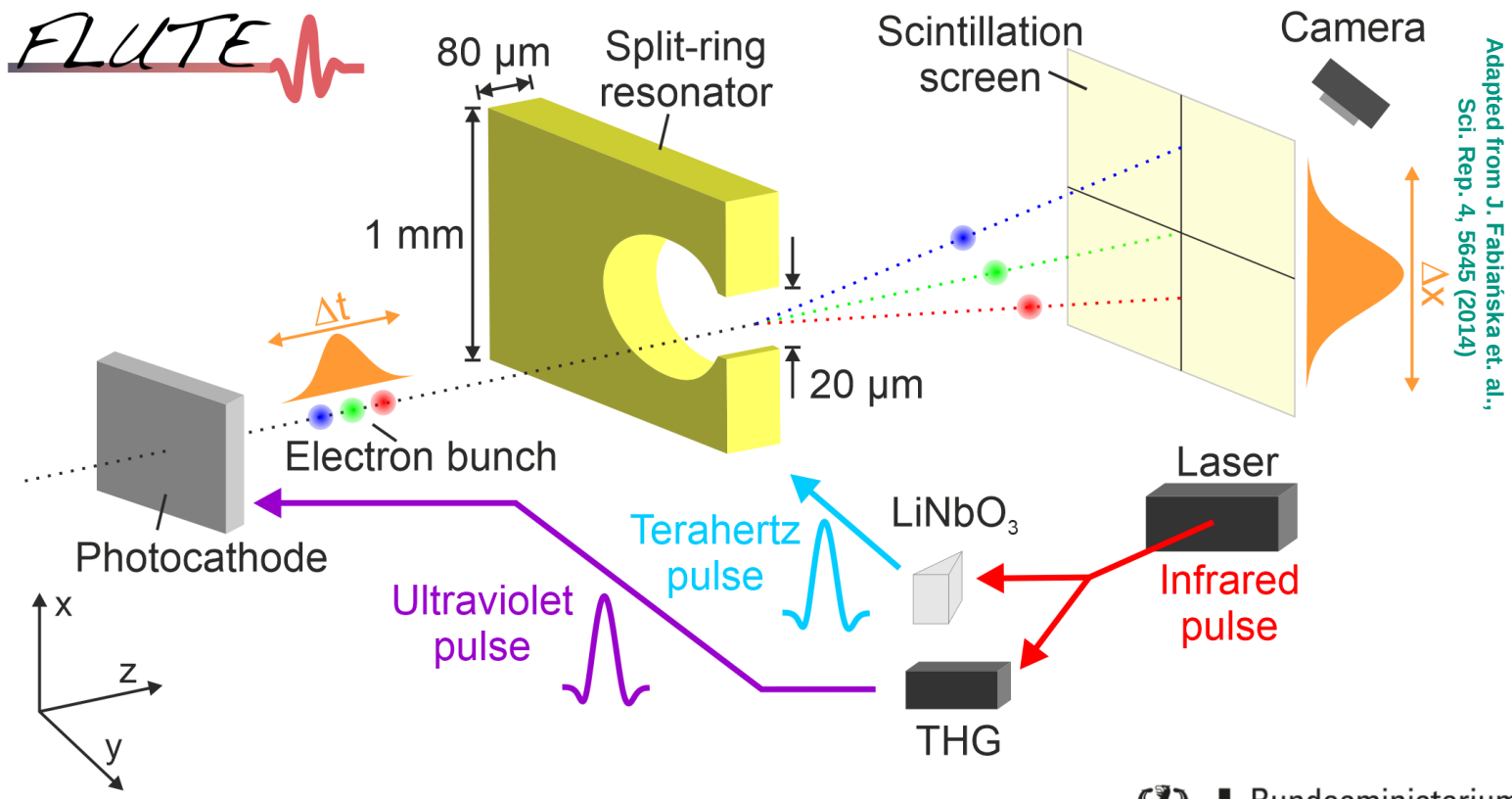
➡ Streaking with THz radiation

➡ Amplifying electric field with split-ring resonator

➡ Temporal resolution:

$$R_z = \frac{\varepsilon_N E_0}{\sigma_{y,SRR} \cdot \sin(\Delta\mu_y) \cdot eV_0 k}$$

Compact-TDS principle:



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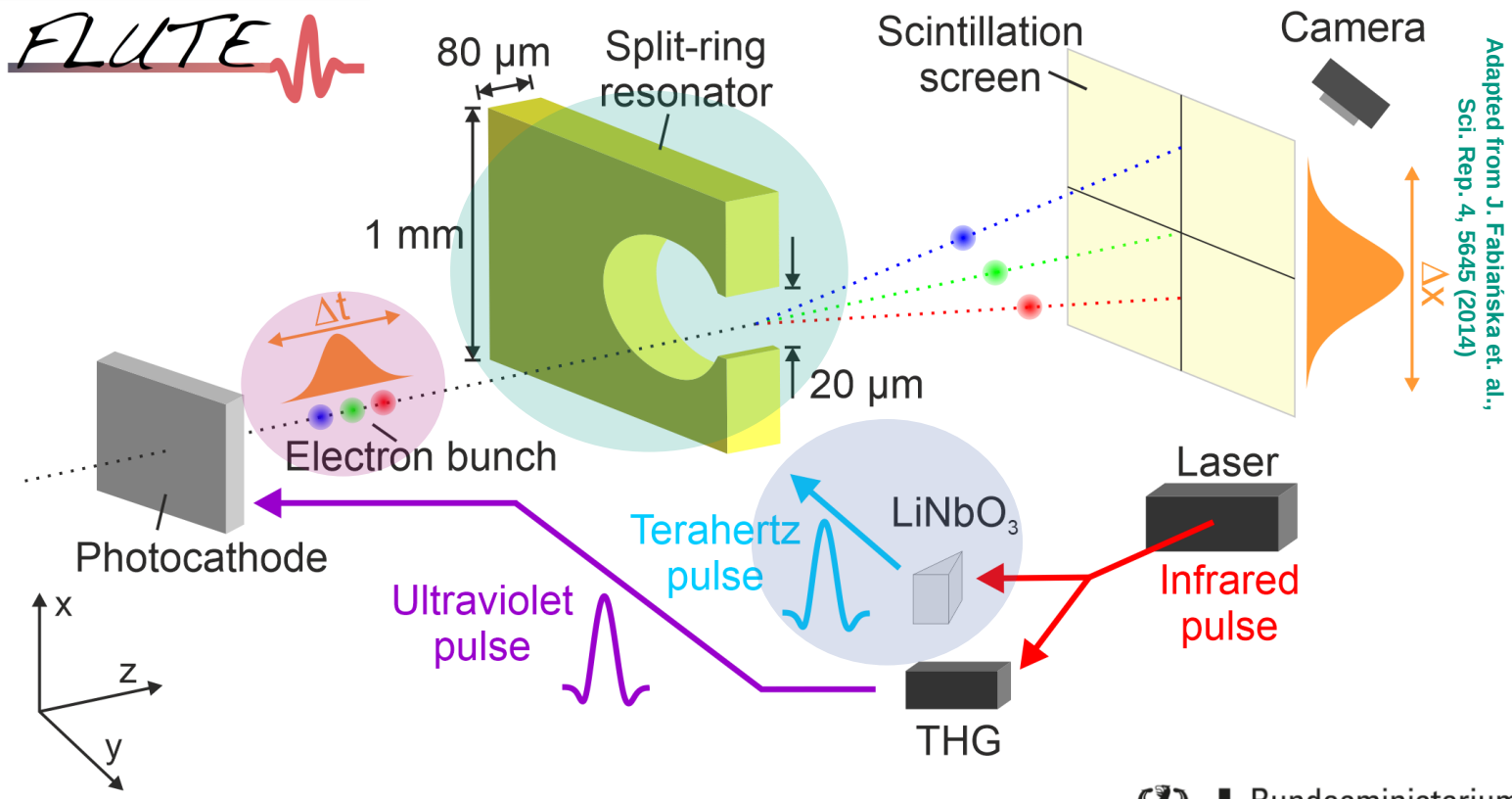

Resonator design

THz generation & transport

Electron beam quality

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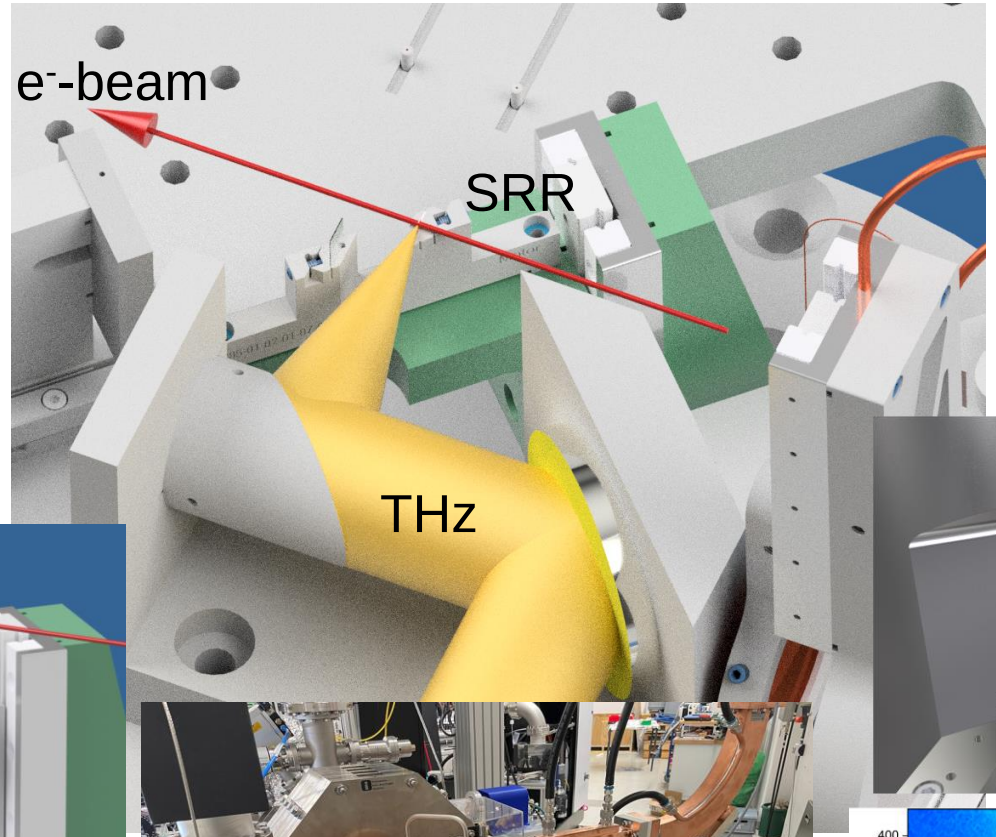
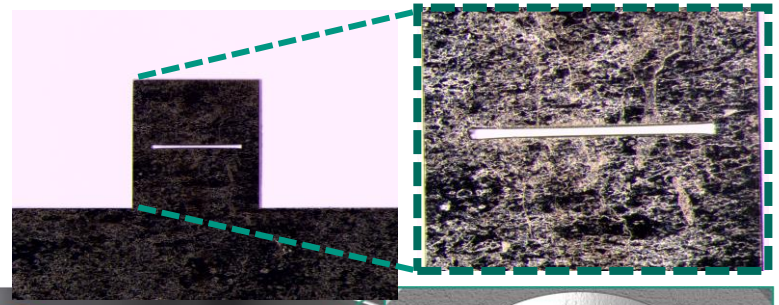
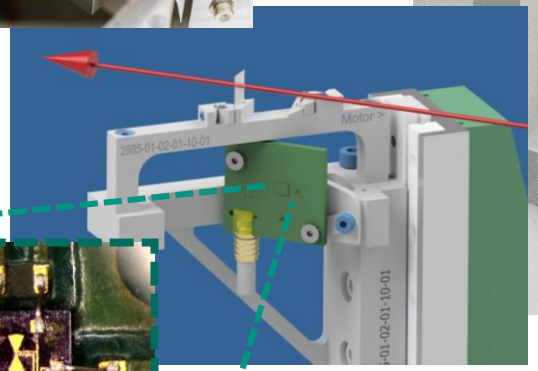
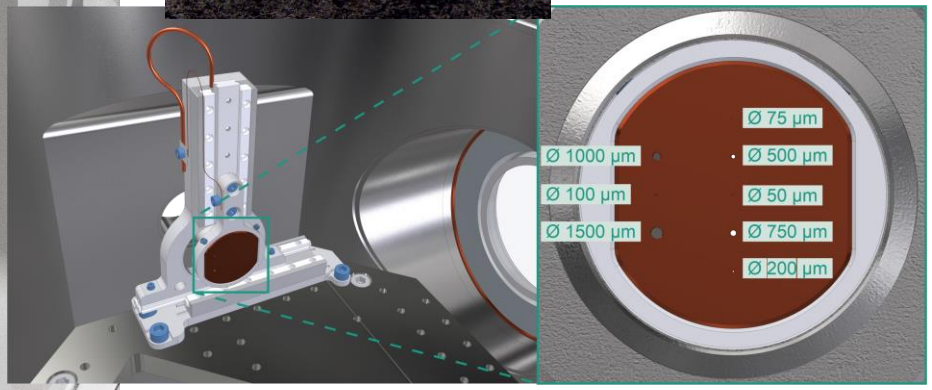
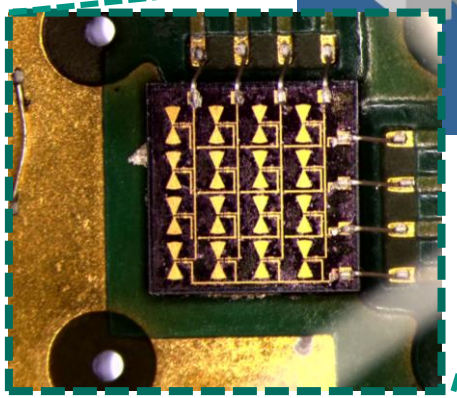
Compact-TDS experiment – Poster teaser

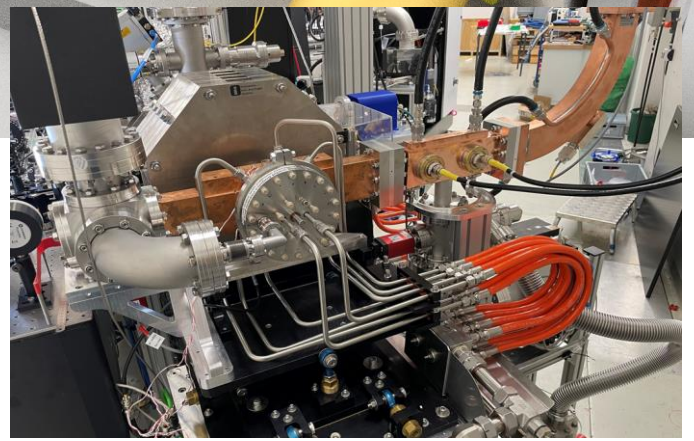


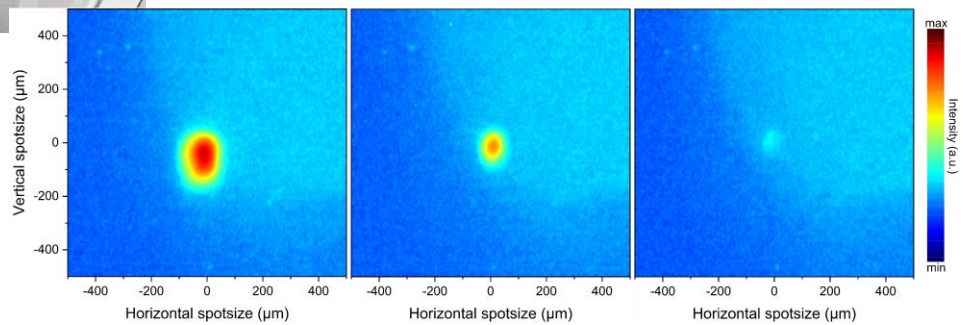












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Doctoral researcher

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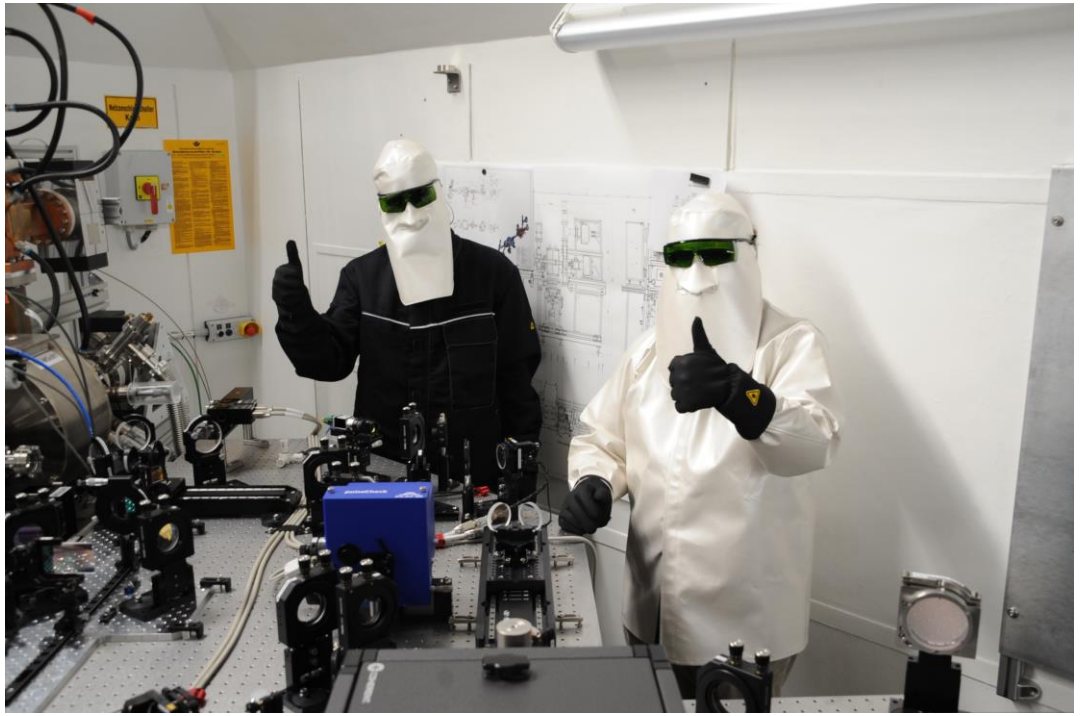

Thank you for your attention and visiting my poster!

On behalf for the Compact-TDS collaboration:
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