# JACQUELINE KEINTZEL

## Accelerator Physicist

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## EDUCATION

### Dr. in Technical Physics

**Vienna University of Technology**

October 2018 – March 2022

Thesis title: Beam optics design, measurement and correction strategies for circular colliders at the energy and luminosity frontier

### M.Sc. in Technical Physics

**Vienna University of Technology**

August 2016 – September 2018

Thesis title: Optics design and performance aspects of the High Energy Large Hadron Collider

### B.Sc. in Technical Physics

**Vienna University of Technology**

July 2013 – July 2016

Thesis title: User manual for the CYPHER atomic force microscope

## RESEARCH HIGHLIGHTS

**Novel beam optics with 60° phase advance in the LHC**
Successful design, simulations, measurements and corrections of novel beam optics with reduced phase advance in the LHC

**Hands-on experience at four storage rings**
Commissioning experience including novel optics measurement at LHC, SuperKEKB, DAΦNE and KARA

## STRENGTHS

Accelerator Physics | Optics design | Optics measurement and correction | Data analysis | Commissioning | Performance optimisation

Problem solving oriented mind-set | Communication skills | Team player | Accountability | Hard-working | Organisation skills

Python | LaTeX | MS Office | Accelerator codes: MAD-X, PTC, SAD

## LANGUAGES

German
English
French
Japanese

## EXPERIENCE

### Staff Accelerator Physicist

**CERN - Beams Department**

November 2023 – Present | Meyrin, Switzerland

- Co-convener of energy calibration, polarisation and monochromatisation team for the electron-positron Future Circular Collider (FCC-ee)
- Beam optics and optics tuning expert for FCC-ee including experimental validation at existing facilities

### Senior Research Fellow

**CERN - Beams Department**

November 2021 – October 2023 | Meyrin, Switzerland

- Centre-of-mass energy modelling for FCC-ee
- Development of new measurement method for amplitude detuning

### CERN Doctoral Student

**CERN - Beams Department**

November 2018 – October 2021 | Meyrin, Switzerland

- Novel beam optics measurements for the LHC and SuperKEKB
- Optimisation of design options for the High Energy LHC

### Undergraduate Student

**CERN - Beams Department**

November 2017 – October 2018 | Meyrin, Switzerland

- Design and comparison of various High Energy LHC lattice options

### Visiting Scientist at KEK

**Optics measurements and commissioning for SuperKEKB**

May and Feb. 2024; Dec. 2019 | Tsukuba, Japan

### Visiting Scientist at KIT

**Polarisation and optics measurements at KARA**

October 2023 | Karlsruhe, Germany

### Visiting Scientist at INFN

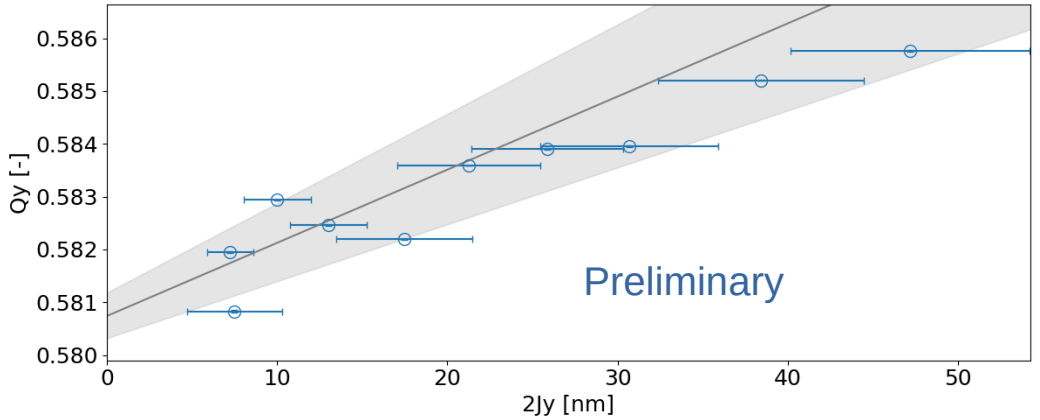
**Experience in machine commissioning for DAΦNE**

February 2020 | Frascati, Italy

# Experience

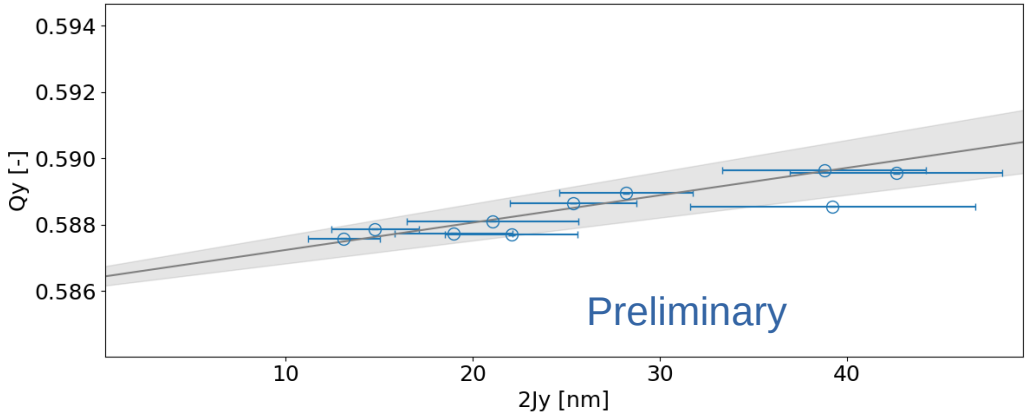
- Secondment at SuperKEKB from 03/02/2024 - 17/02/2024 and 18/05/2024 - 01/06/2024 in WP1
- Goal: Optics measurements at various machine conditions including with and without crab-waist transformation, commissioning experience, hands-on control room experience
- Summary:
  - Many optics measurements taken
  - Ongoing analysis, many things to learn
  - Excellent training from local experts

Amplitude detuning measurements




0% CW

dQy/d2Jy = (138±30) x $10^3$ $m^{-1}$




40% CW

dQy/d2Jy = (82±13) x $10^3$ $m^{-1}$