

# Towards Reinforcement

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# Experience

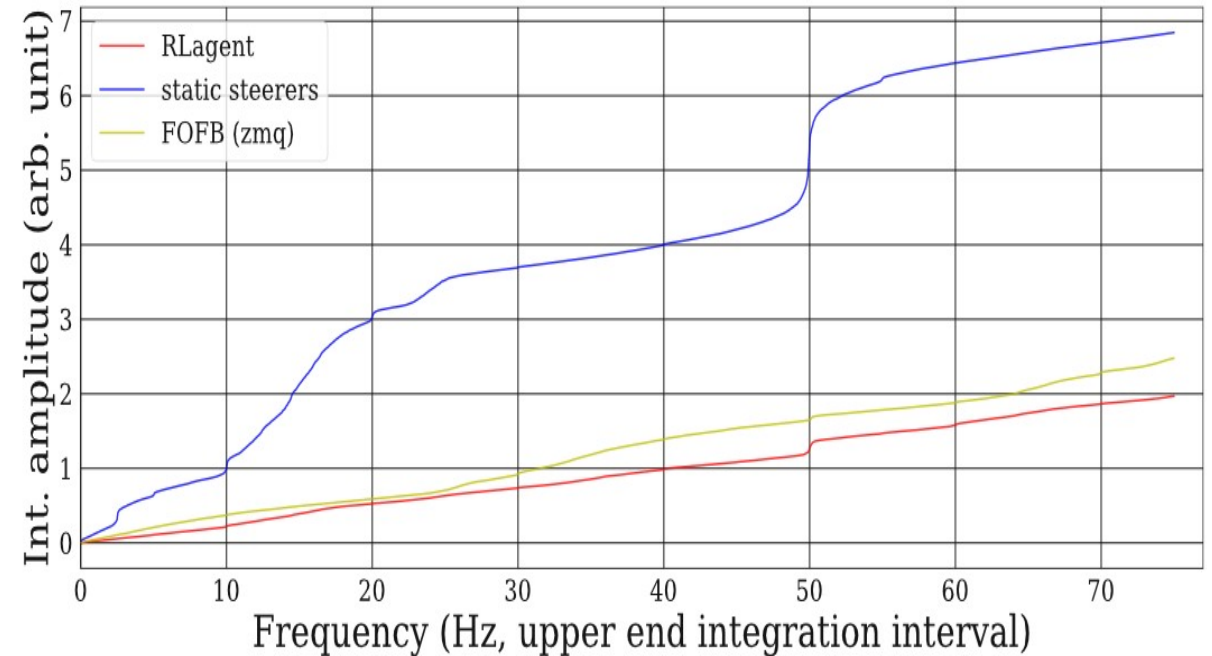
- Light optics
  - Töplers method, interferometry,
  - ray tracing
- Magnets and magnetic fields
  - measurement, representation
  - Iron dominated magnets
  - Design, calculation, procurement production, supervision
  - Fiducialisation measurements
- Test station build up
- BESSY VSR Testing hall / coordinator radiation protection bunker
- Digital Twinning / Machine learning
  - Thor\_scsi / DIGUM Convener User Interface

- TU Graz Austria
- Uni Natal Durban South Africa
- CERN Geneva Switzerland
- GSI Darmstadt Germany
- UNI Mainz Germany
- JINR Dubna Russia
- GSI Darmstadt Germany
- BESSY Berlin Germany



# RL 4 ACC

- „Domain Scientist“: co-worked
  - Luis Vera Ramirez
  - Alex Schütt
  - Combined: Tf + bluesky → proper independent implementation  
<https://blueskyproject.io/bluesky-adaptive/>
  - Lecture 4 accelerator physics  
Mainz, AccelenceE
- Digital Twinning
  - Together with Waheed
  - Using thor\_scsi as computation engine
- DIG-UM Convener  
Topic group user interfaces
- Improvement  
BESSY II (MLS)



L. Vera Ramirez et al, ICALEPS 21, THAL01.pdf

Machine Learning Tools - Improve BESSY II Operation

# Non linear kicker: injection optimisation using RL?

Injection not trivial

- Hit the sweet spot on
- Which turn?

