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Status of DATCON

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Latest DATCON Test Beam at CERN

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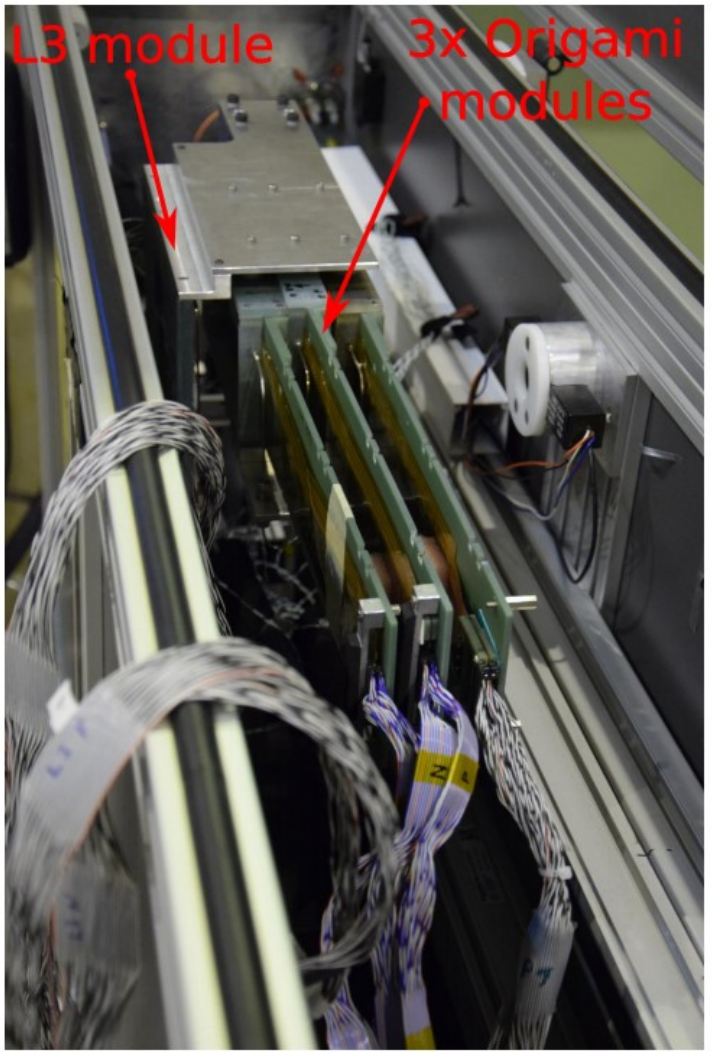
- DESY SVD sensor stack:
  - TB Campaign November 2014
  - 120 GeV pions. Perpendicular incidence
  - 4 SVD modules arranged with the same spacing as in Belle II
- New FADC ver. 2 and FADC Controller
- New FTB ver. 3
- DATCON setup using AMC v3.0
- Operation of the complete FADC to DATCON DAQ chain . ONSEN, COPPER and HLT missing

→ Proof of principle demonstrated



DATCON results

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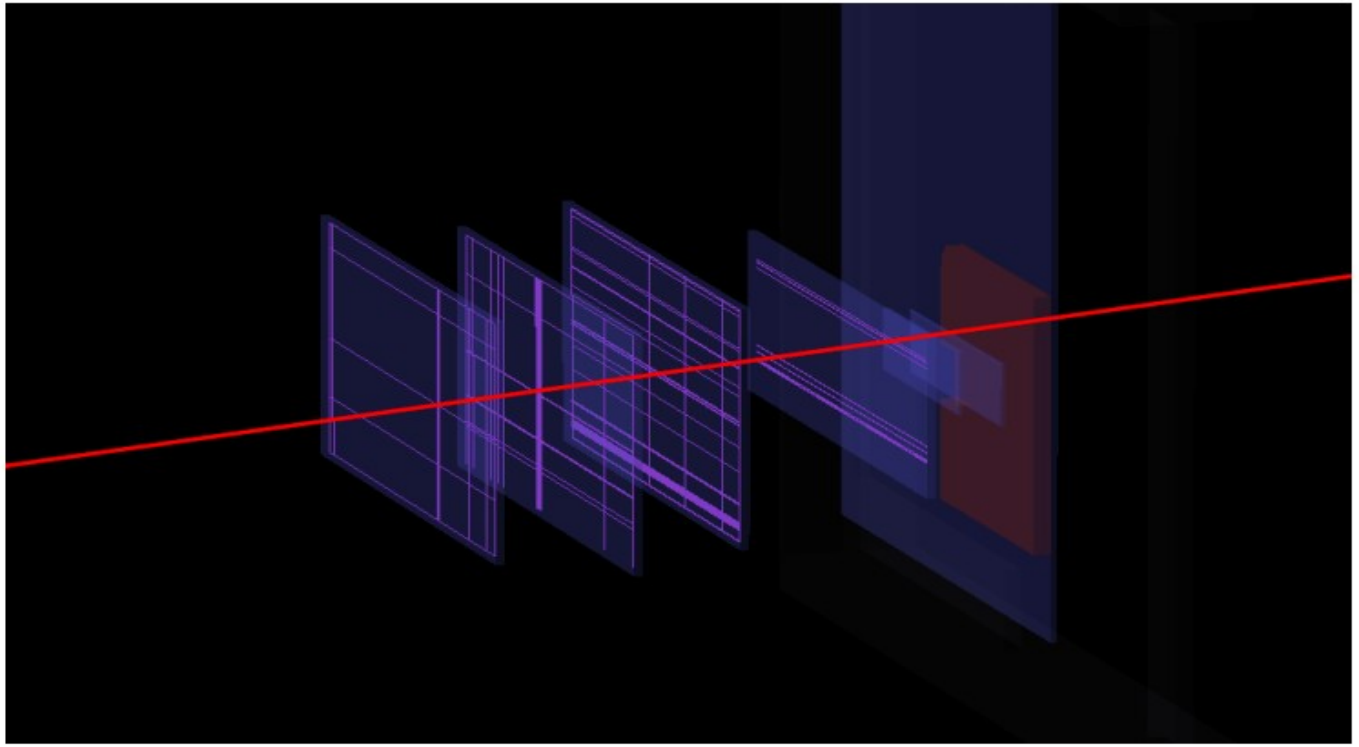
- Most of the work involved debugging of FADC/FADC Controller/ FTB firmware and SVD software
- Managed to get a hardware run for 30 minutes with a fixed ZS threshold . Stable Hough space data acquisition with DATCON



Latest AMC Revision

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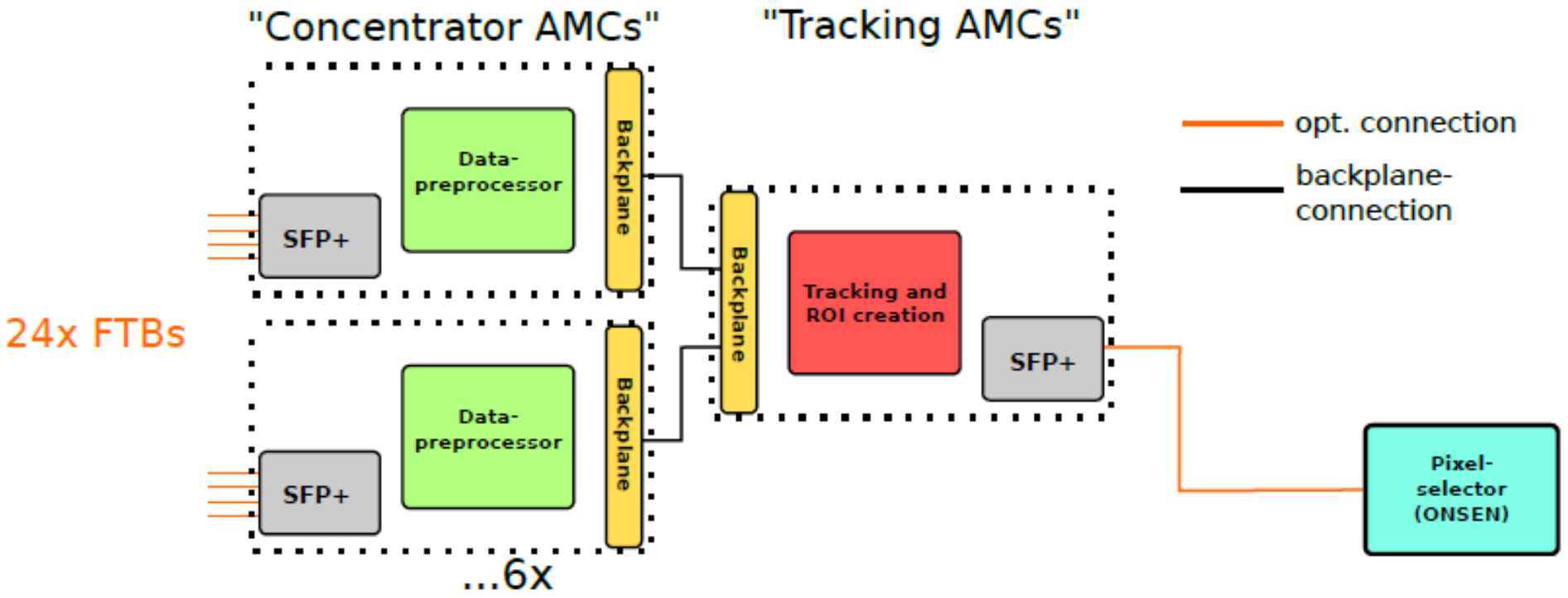
- New revision of AMC card received from Beijing
- AMC v3.1 will replace the old v3.0 (used on TB)
- Used as Concentrator card to handle data from FTB
- Testing and characterization are needed before mass production



Gigabit Transceivers

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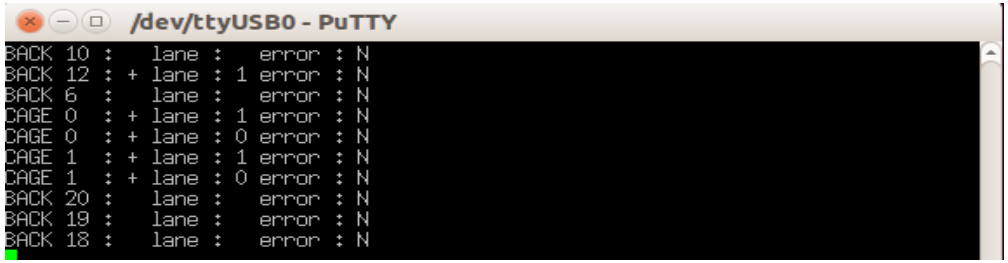
- Test based on Xilinx Aurora
- Each dual GTP transceivers has two independent channels
- 4 SFP cages. Different configuration tested:
  - Optical loop-back
  - Connected to AMC v3.0 and FTB
- Back-plane test:
  - Connected to DHE and AMC v3.0
  - Jumper loop-backs
- Running at 2.5442 Gbps and 3.18025 Gbps
- No errors detected after few hours test

UART, Ethernet and Conclusion

UART used to check detected errors on GTP link



- Implementation of SiTCP
  - Slow control

- All tested parts worked well
- Not necessarily needed, DDR2 memory could also be tested

→ GTP transceivers , UART and Ethernet are working

→**DATCON AMC boards are ready for production**

New Backplane Design

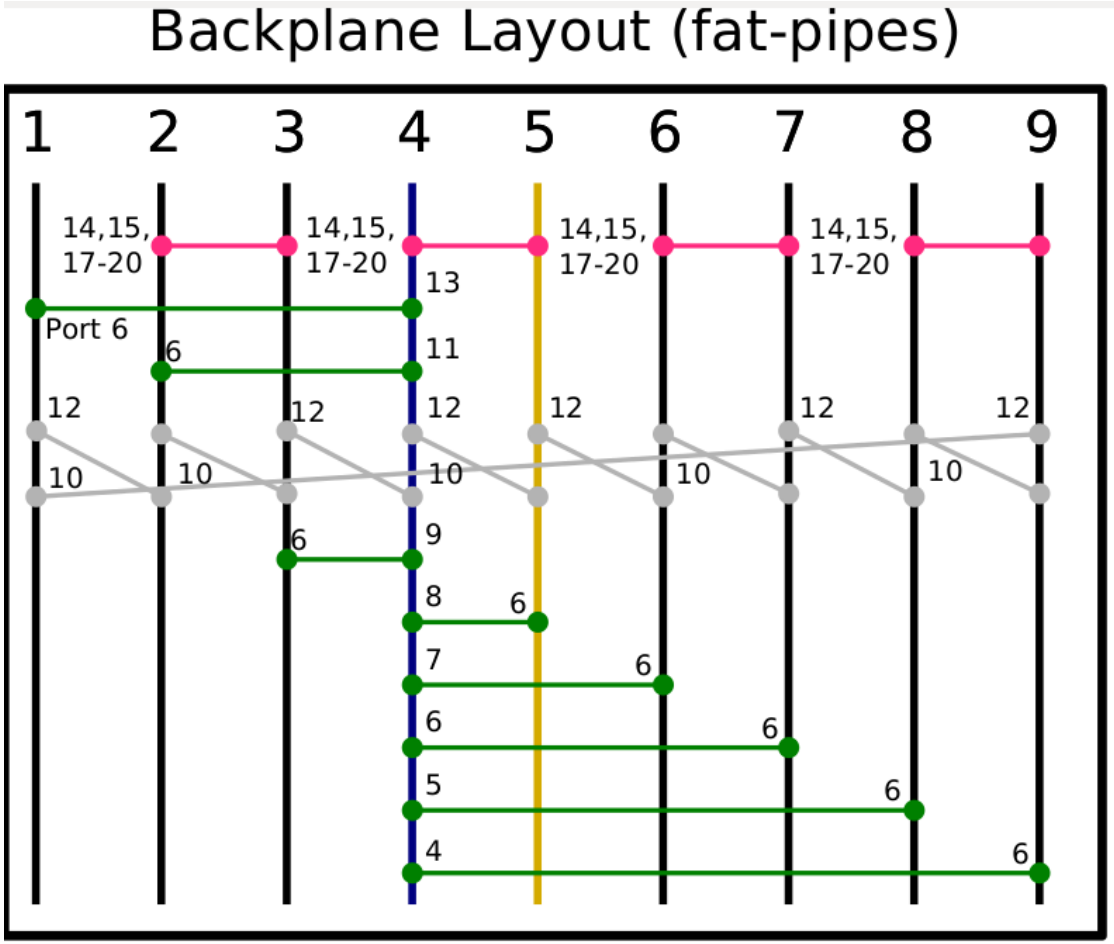
- 7 crates from PENTAIR will be ordered. 3 used for DATCON (2 for the final experiment) and 4 for ONSEN.

Concentrator AMCs (AMCv3) | Tracking AMC (DHHC) | SFP ext. card

DATCON backplane

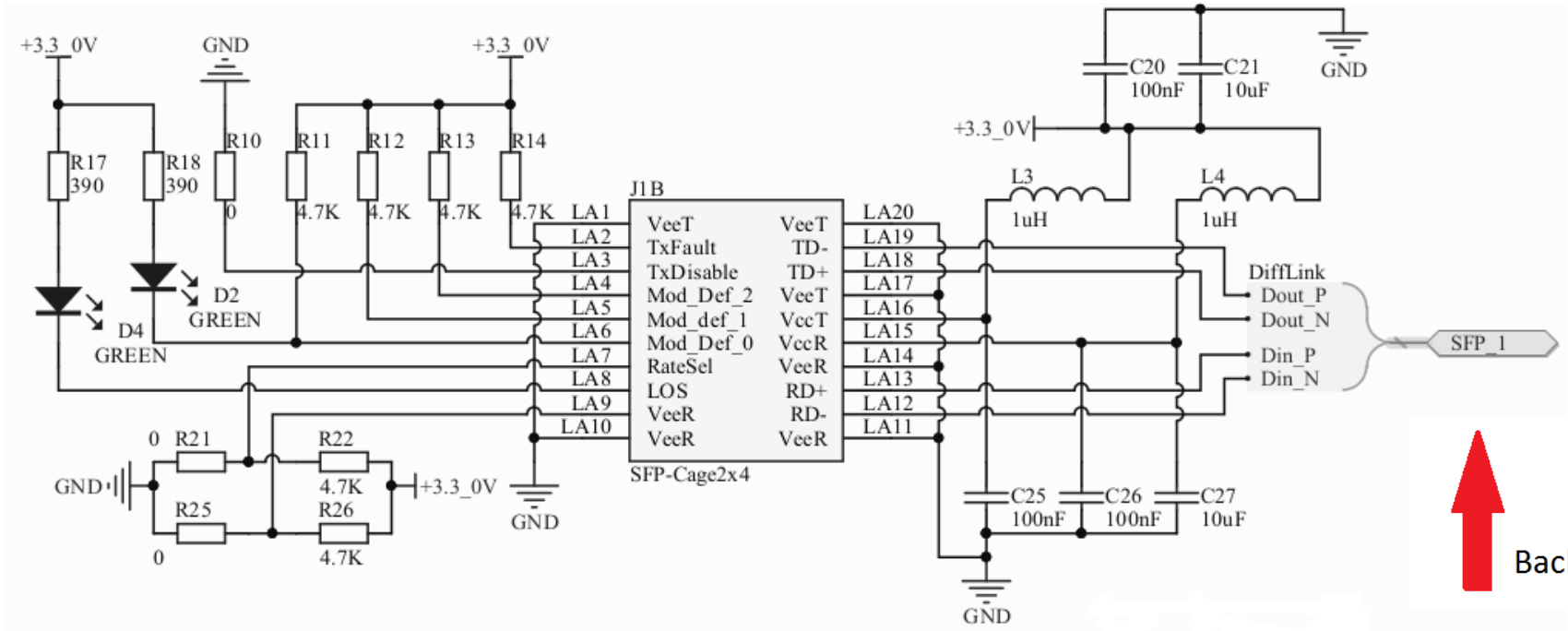
optional (ONSEN) Daisy-Chain

SFP extension card



SFP extension card

- Passive PCB in AMC format. Currently under development supervised by Igor Konorov (TUM)
- 8 SFP+ cages
- Connected to DHE over back-plane



Conclusions

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- DATCON proof of principle demonstrated in the latest beam campaigns
- Latest AMC revision 3.1 tested. Green light can be given to Zhen-An Liu
- Back-plane is designed, production crates ordered
- SFP extension card for optical link to ONSEN is designed

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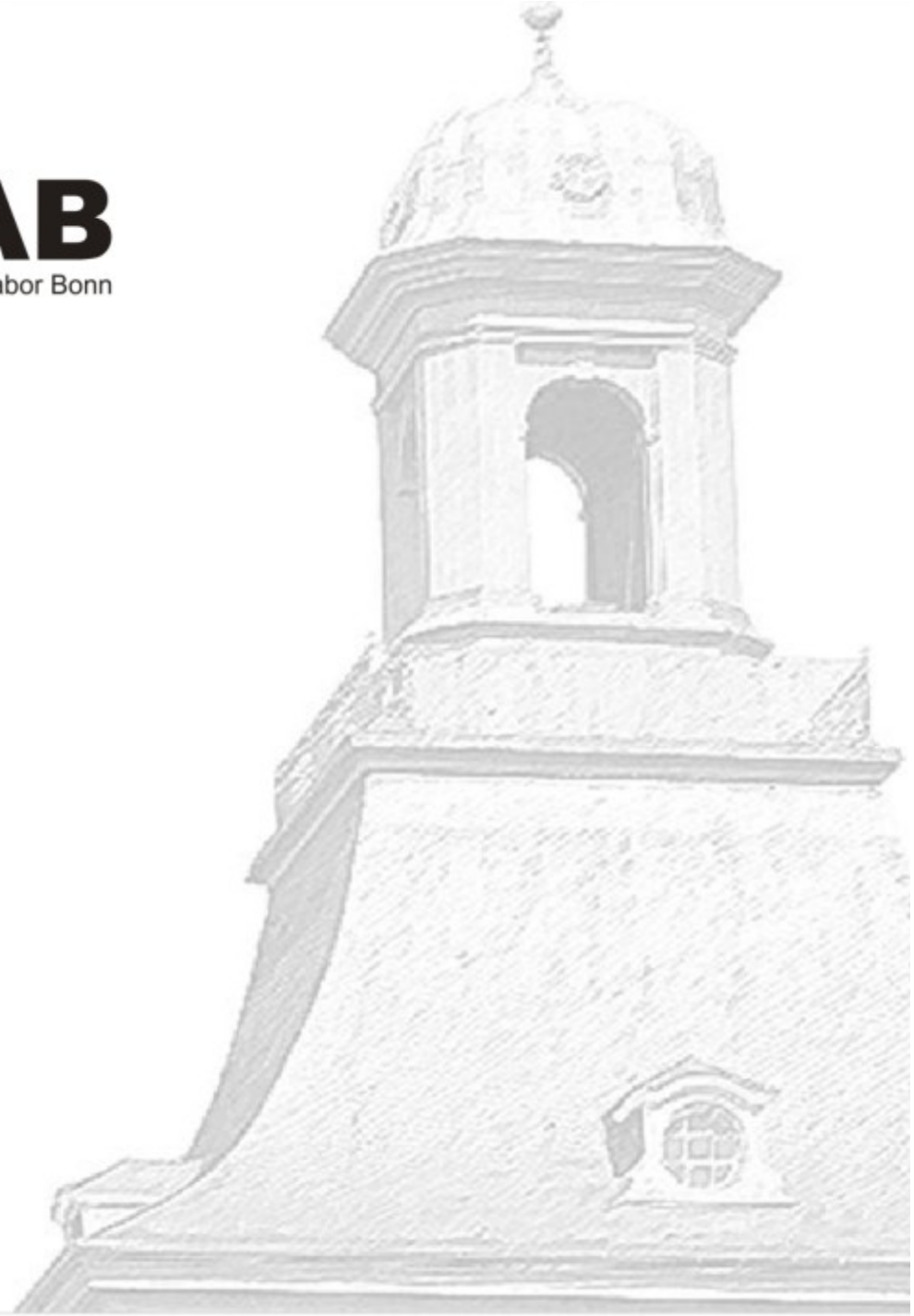

Thank you

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