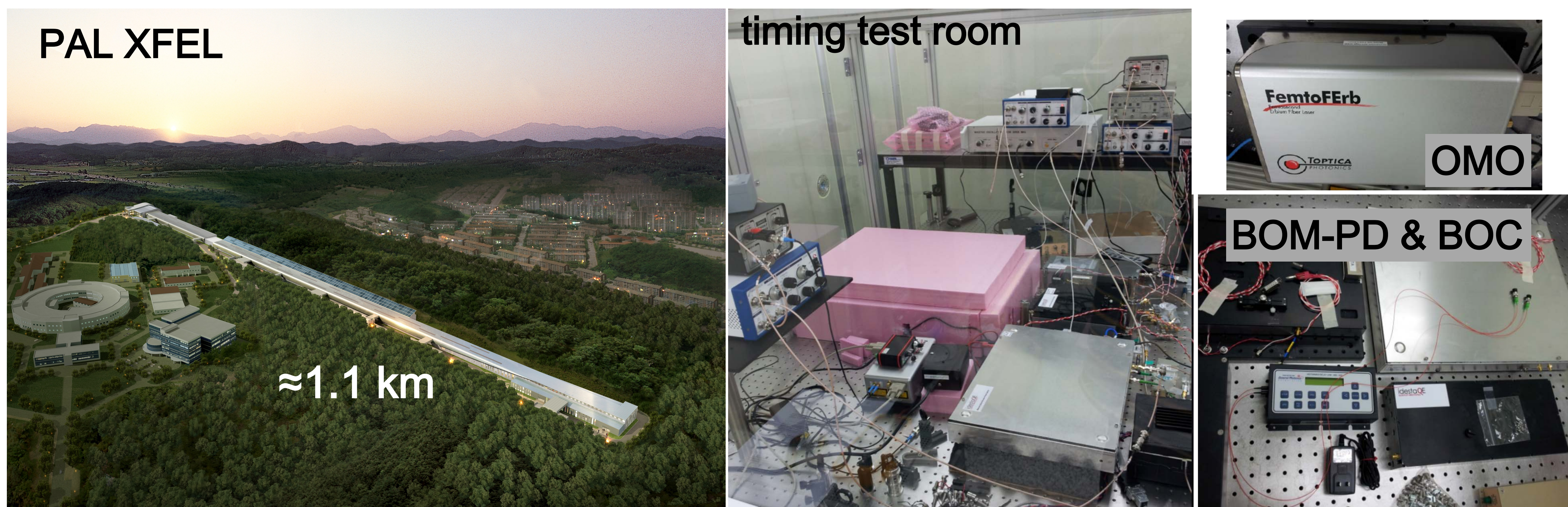


CURRENT STATUS OF DEVELOPMENT OF OPTICAL SYNCHRONIZATION SYSTEM FOR PAL XFEL

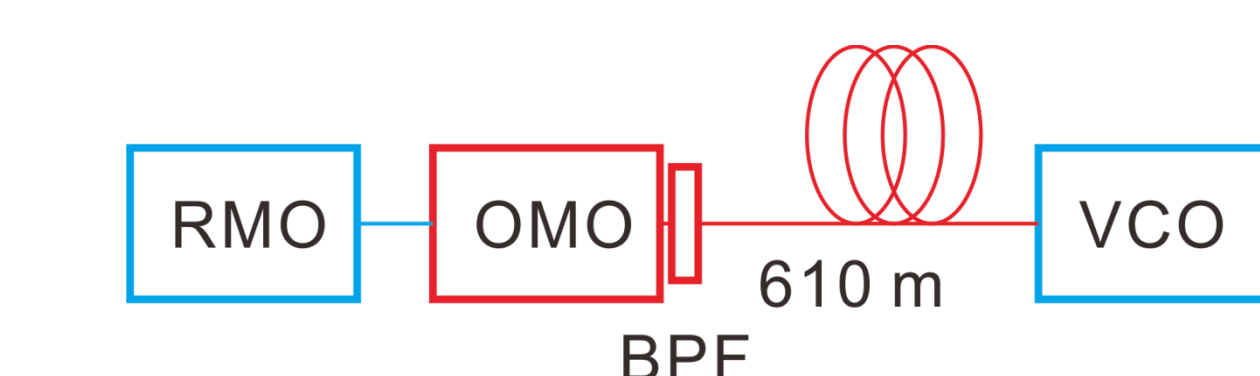
Chang-Ki Min, Intae Eom, Heung-Sik Kang, Byoung Ryul Park, Sung-Ju Park, PAL, Pohang, South Korea
Kwangyun Jung, Jungwon Kim, Jiseok Lim, KAIST, Daejeon, South Korea

Abstract

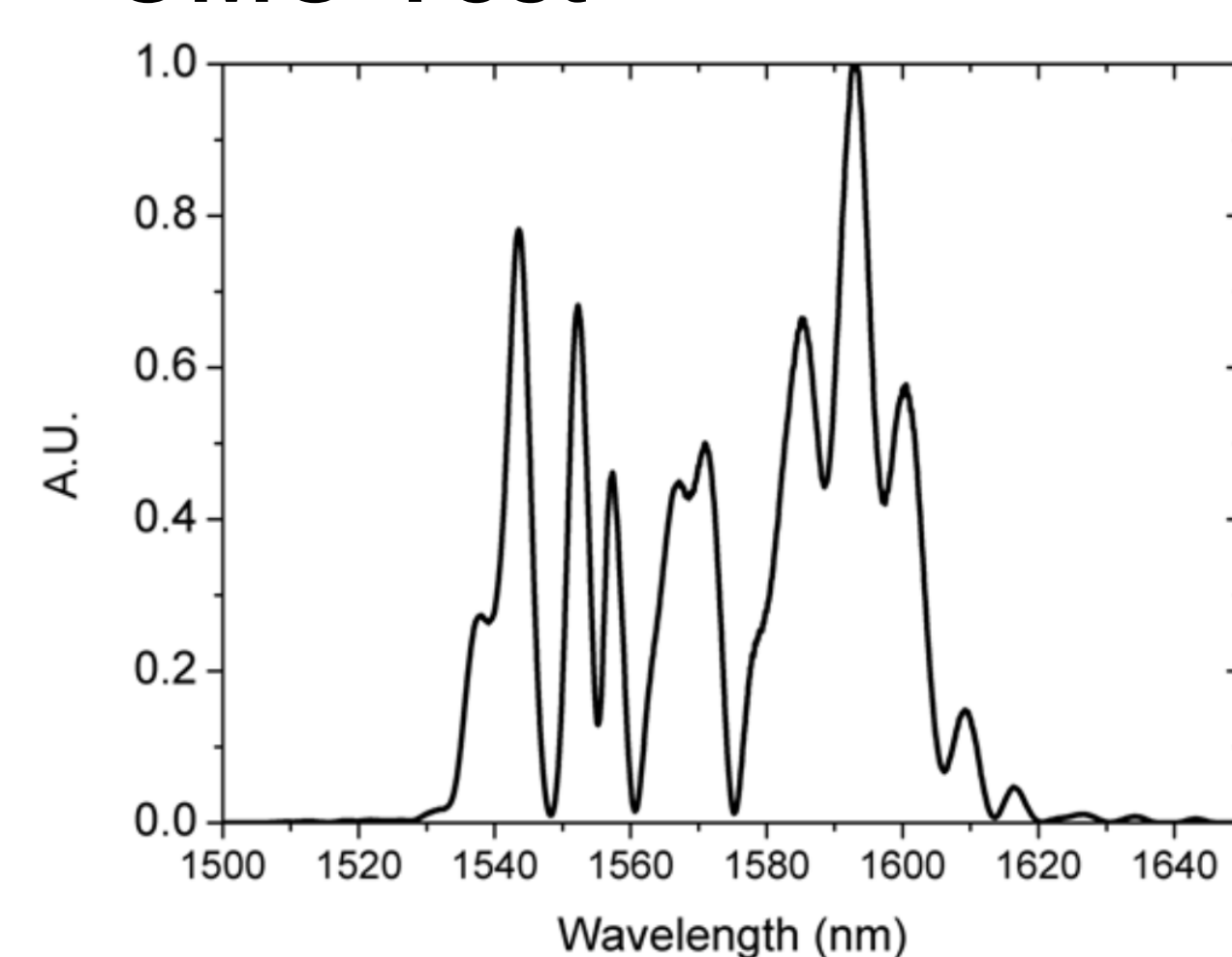
Optical synchronization system has been developed for higher quality PAL XFEL with low timing jitter since 2011. In last two years, laboratory test was successfully performed, and test in our accelerator environment is on-going. In laboratory, we tested the synchronization of RF master oscillator and optical master oscillator, the stabilization of 610 m optical fiber link, and the remote optical-to-RF conversion. We report recent our development results and summarize on-going optical timing project.



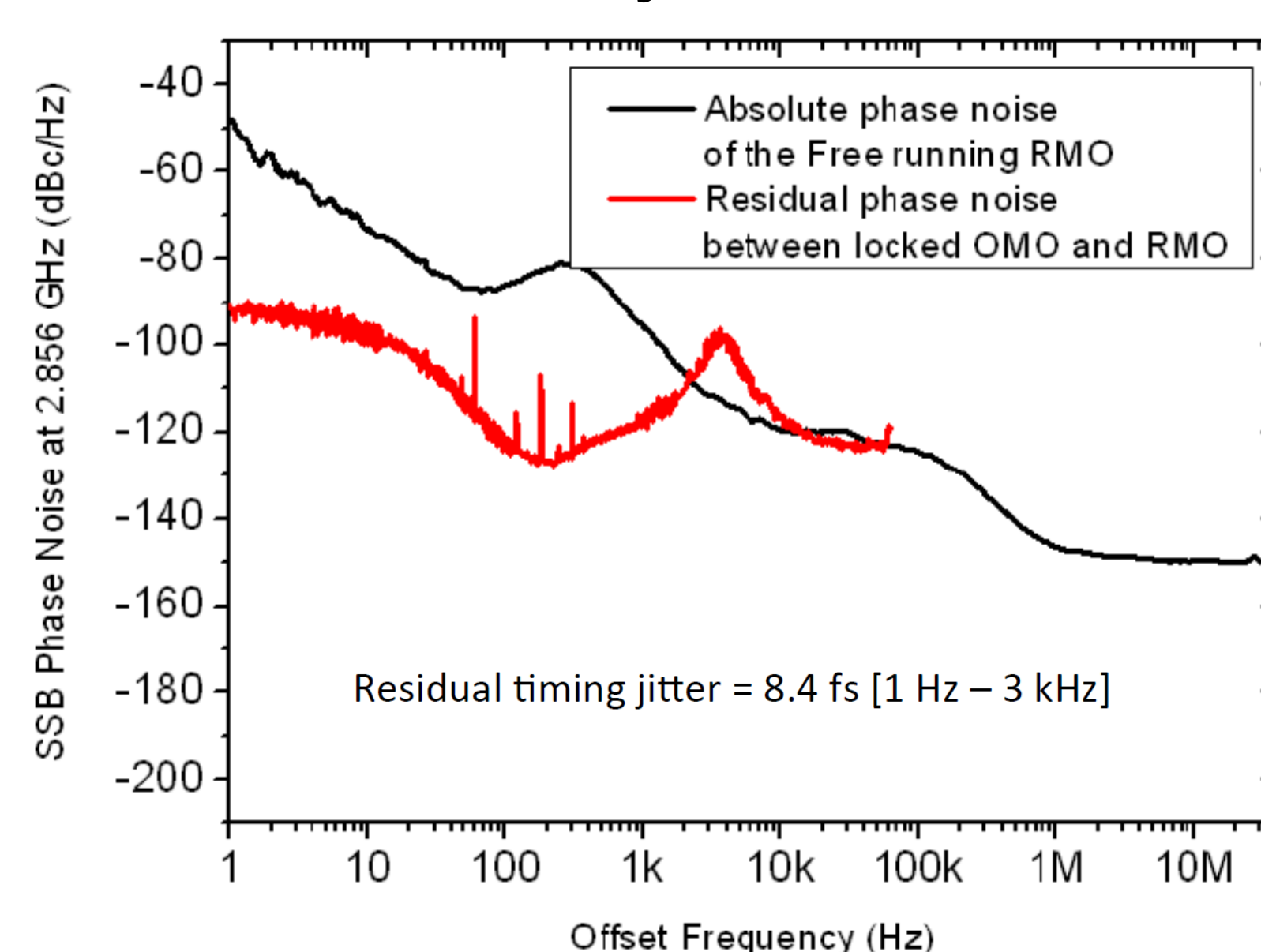
Laboratory Test



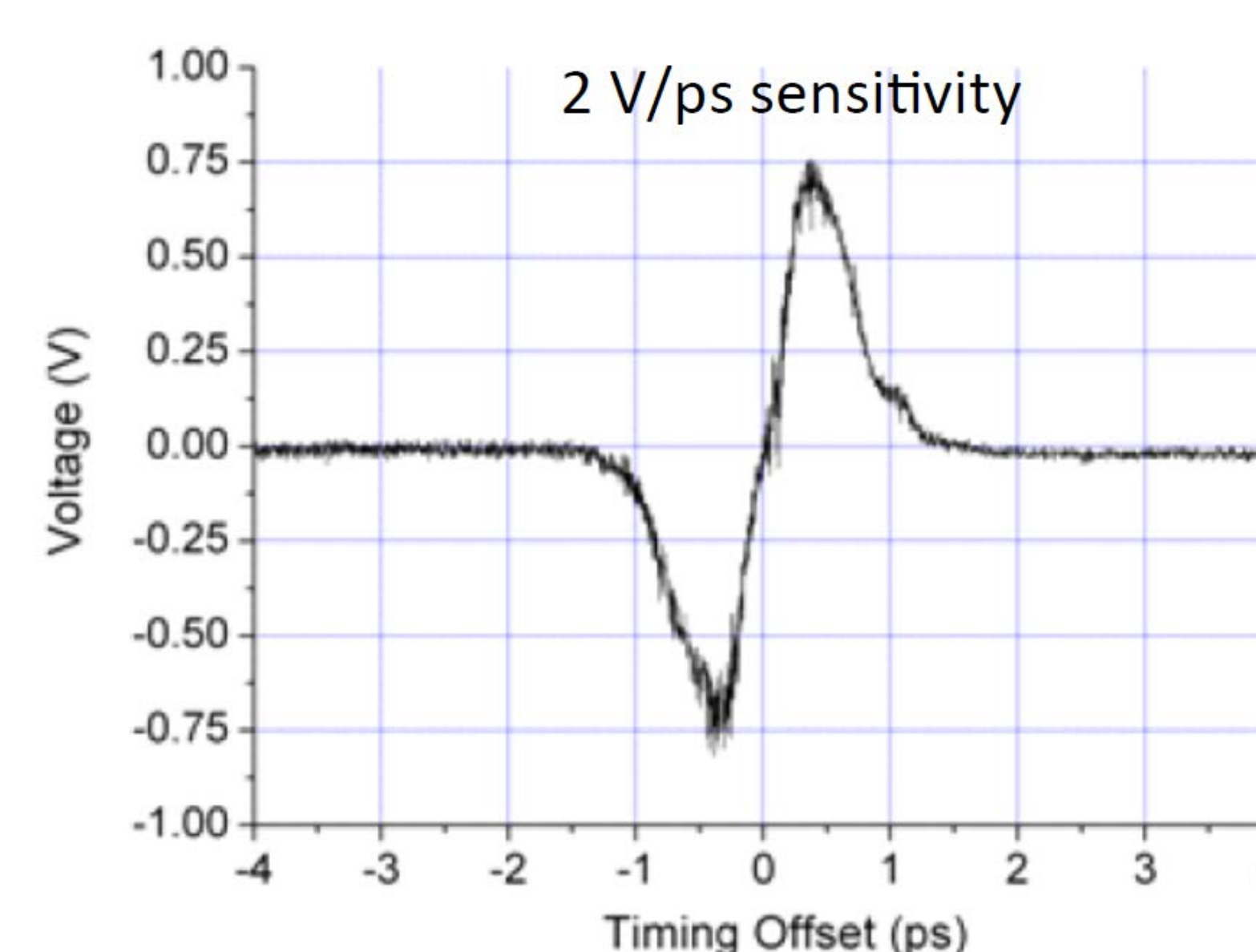
OMO Test



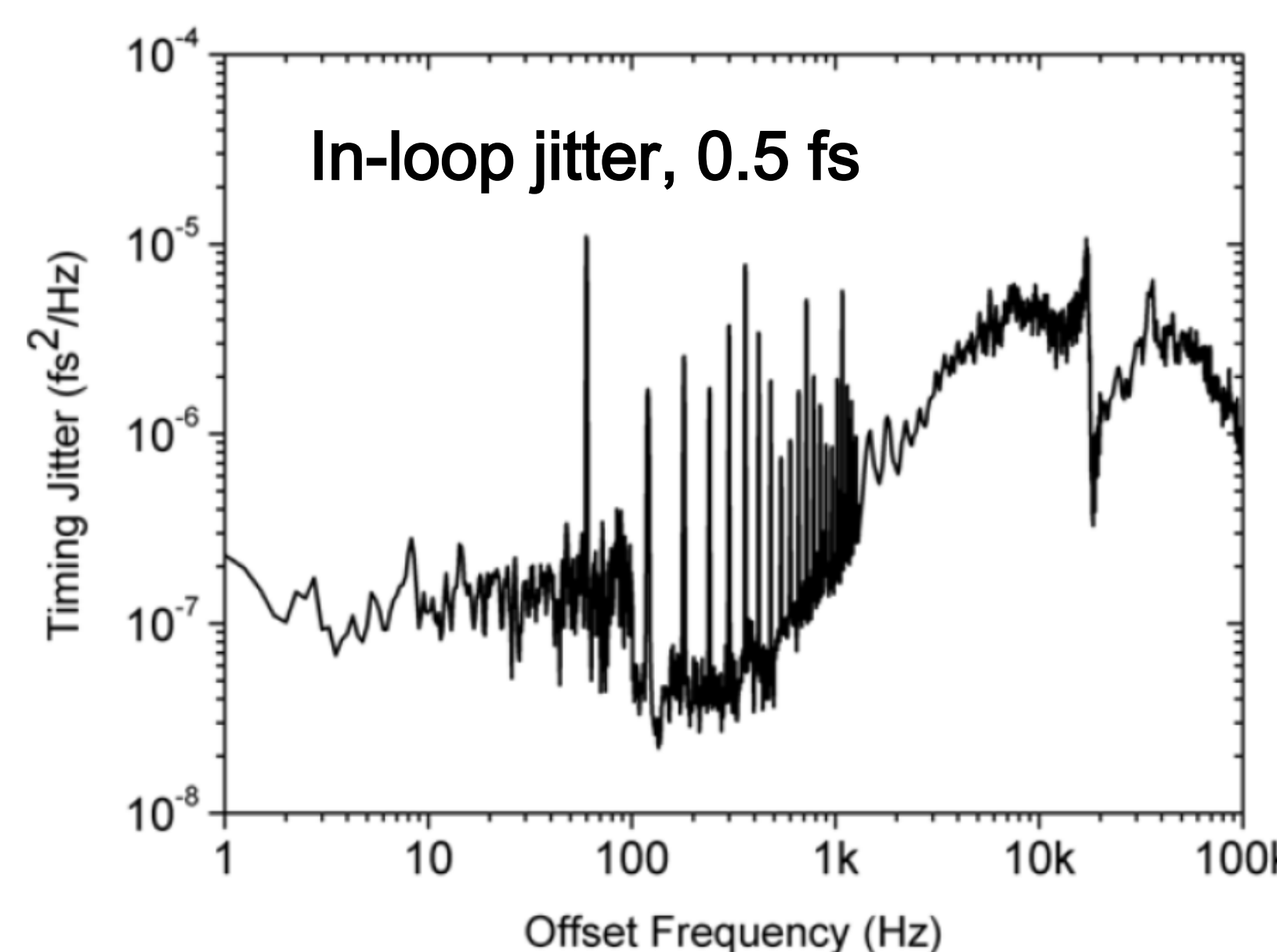
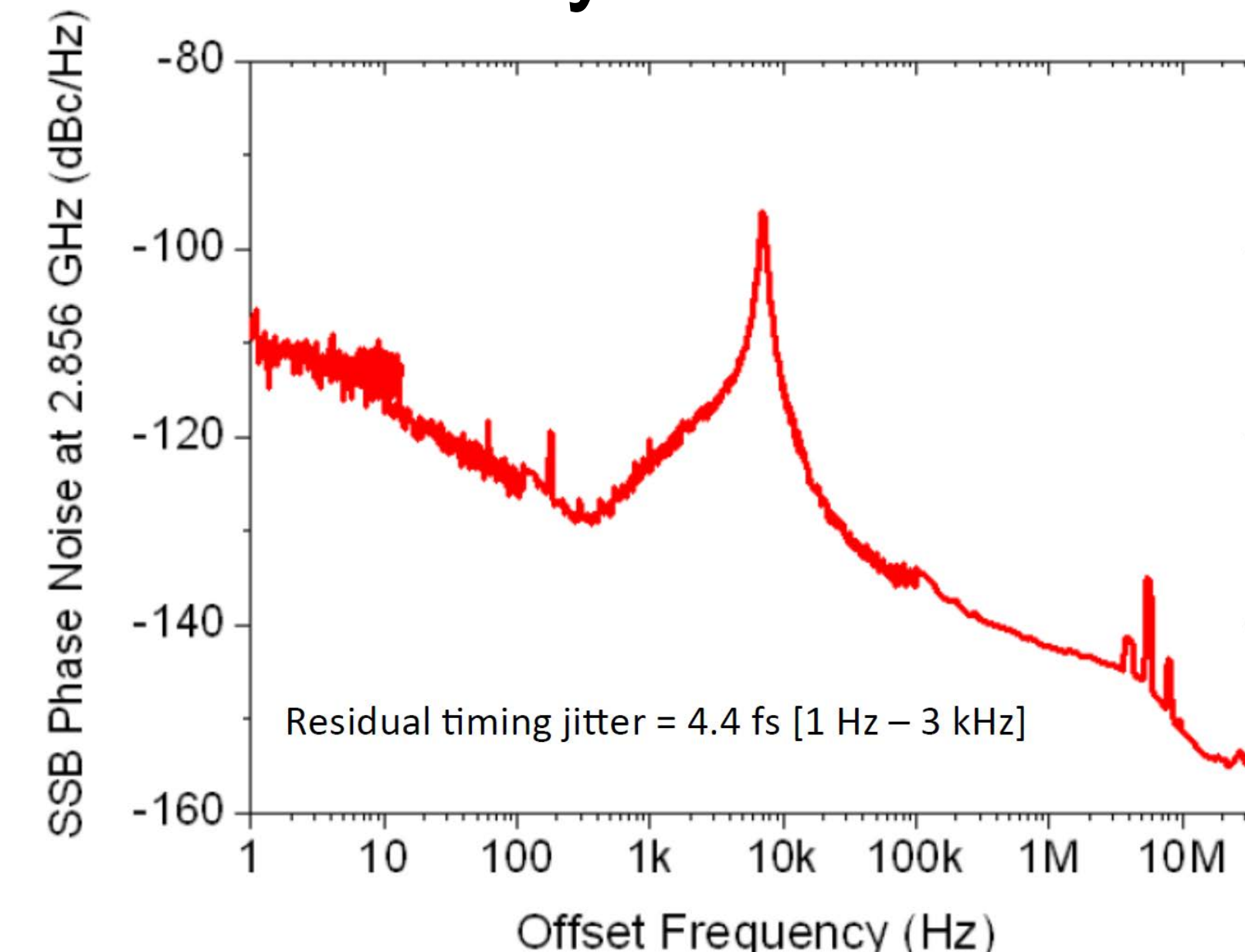
RMO - OMO Synchronization



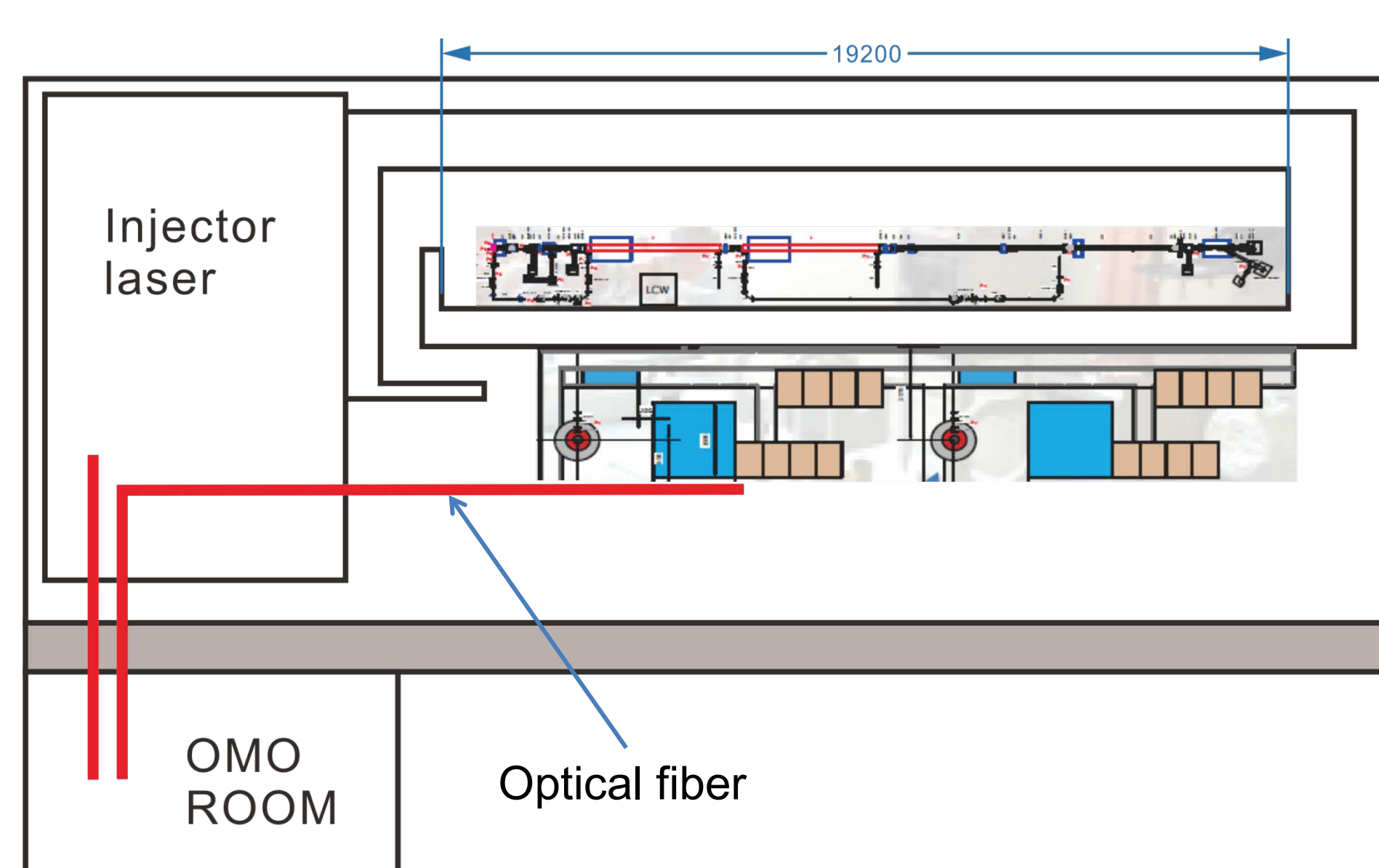
Link test



OMO - VCO Synchronization



Test in Our Accelerator Environment (on-going)



- 4 optical fibers installed between test room and injector test facility
- Influence of our accelerator environment will be tested (temperature, humidity, and acoustic noise)