KAGRA Lock Acquisition in One Slide

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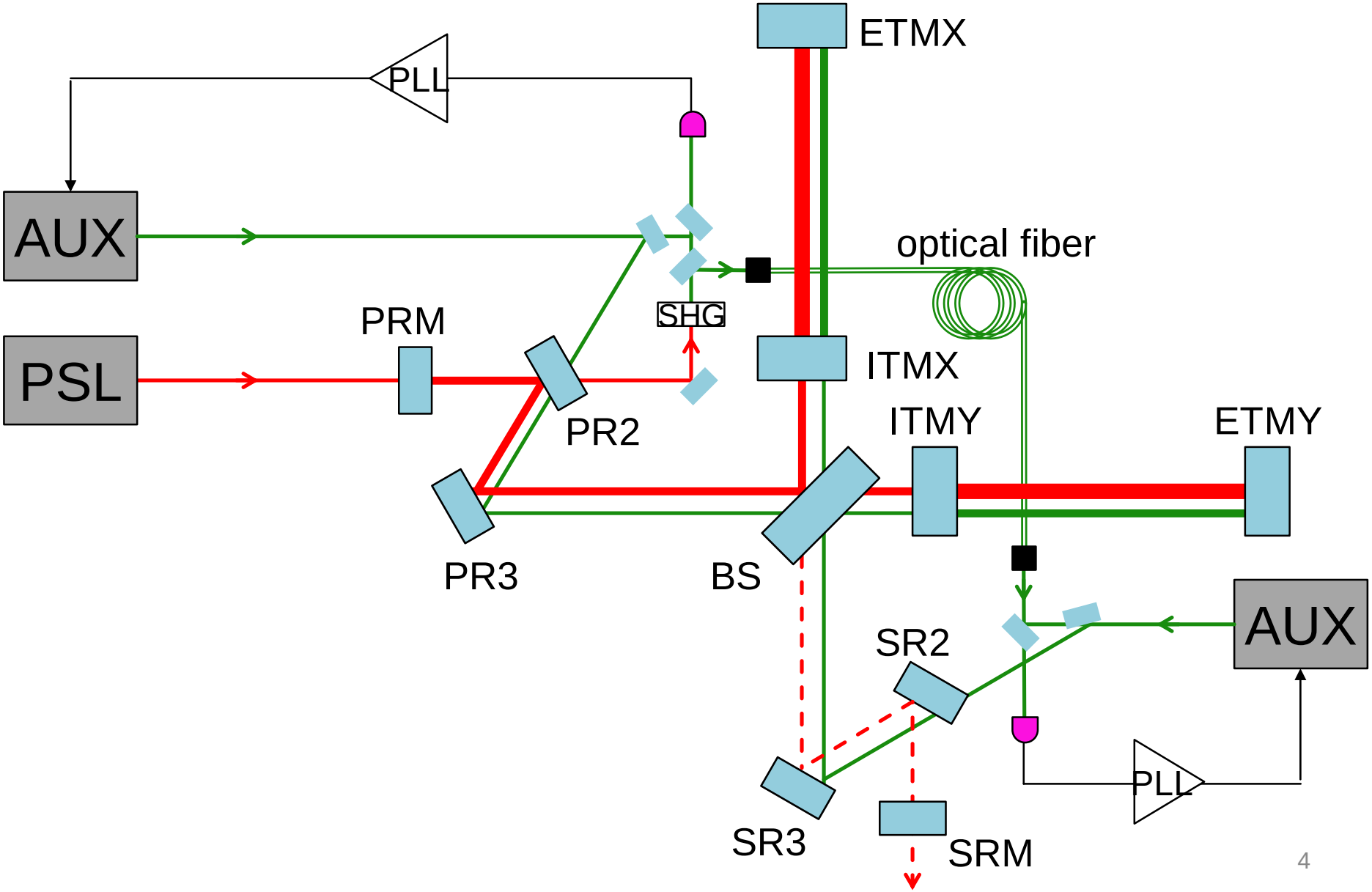
KAGRA Lock Acquisition Overview

- Suspensions: Virgo-like SAS
- Configuration: aLIGO-like DRFPMI with folded recycling cavities
- Lock Acquisition: Basically the same as aLIGO

- What are the differences?
  1. Green injection from PR2/SR2 (instead of ETMs)
     - we don’t need 3-km long fibers for PLL
  2. Non-resonant sideband for DRMI (instead of 3f)
     - to avoid effect from carrier x 3rd harmonics beat
     - have to make f3 AM

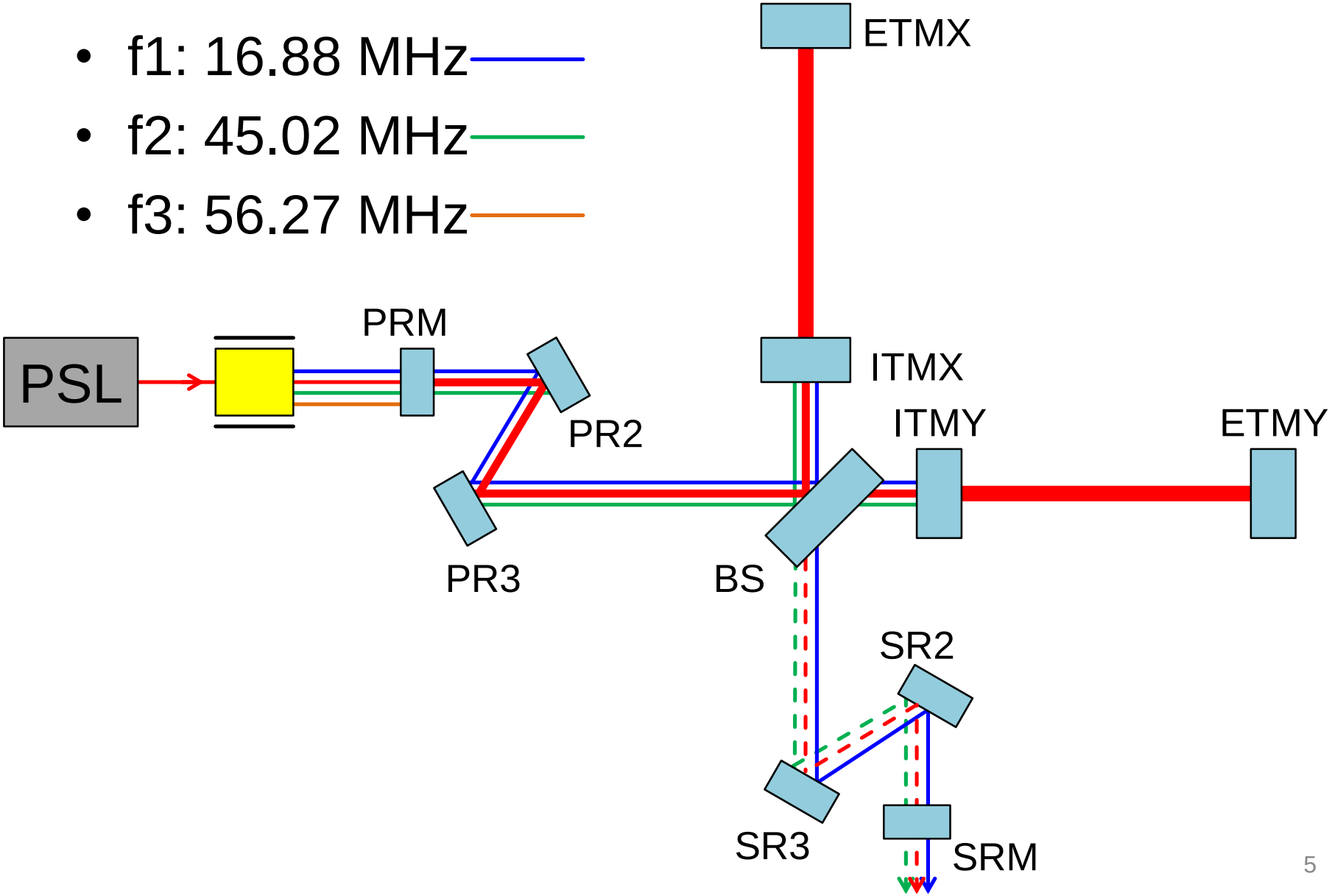
Additional Slides
(some details about the plan)

Arm Length Stabilization



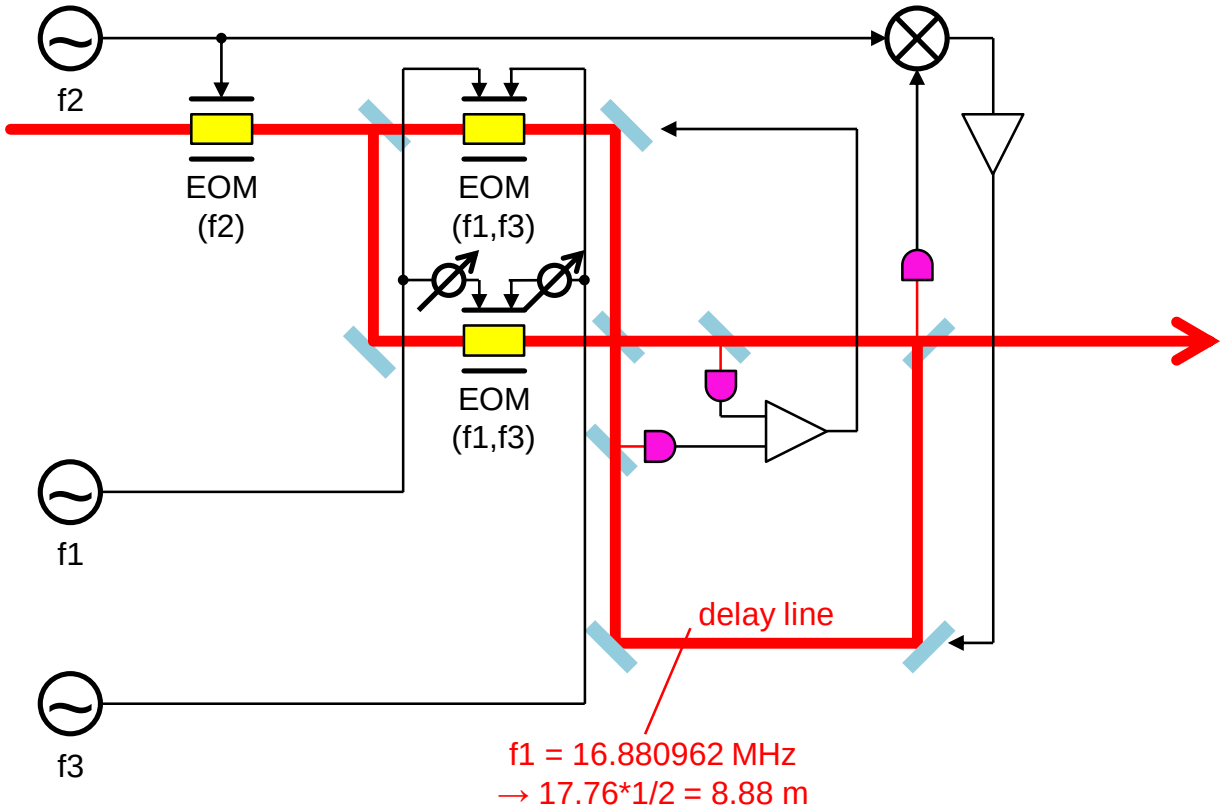
RF Sideband Conditions

- f1: 16.88 MHz
- f2: 45.02 MHz
- f3: 56.27 MHz



RF Modulation Scheme

- f1: PM (+ AM for DRSE)
- f2: PM
- f3: AM (only for lock acquisition)



MICH Error Signal in 3f case

- MICH zero crossing shifts a few nm with CARM offset

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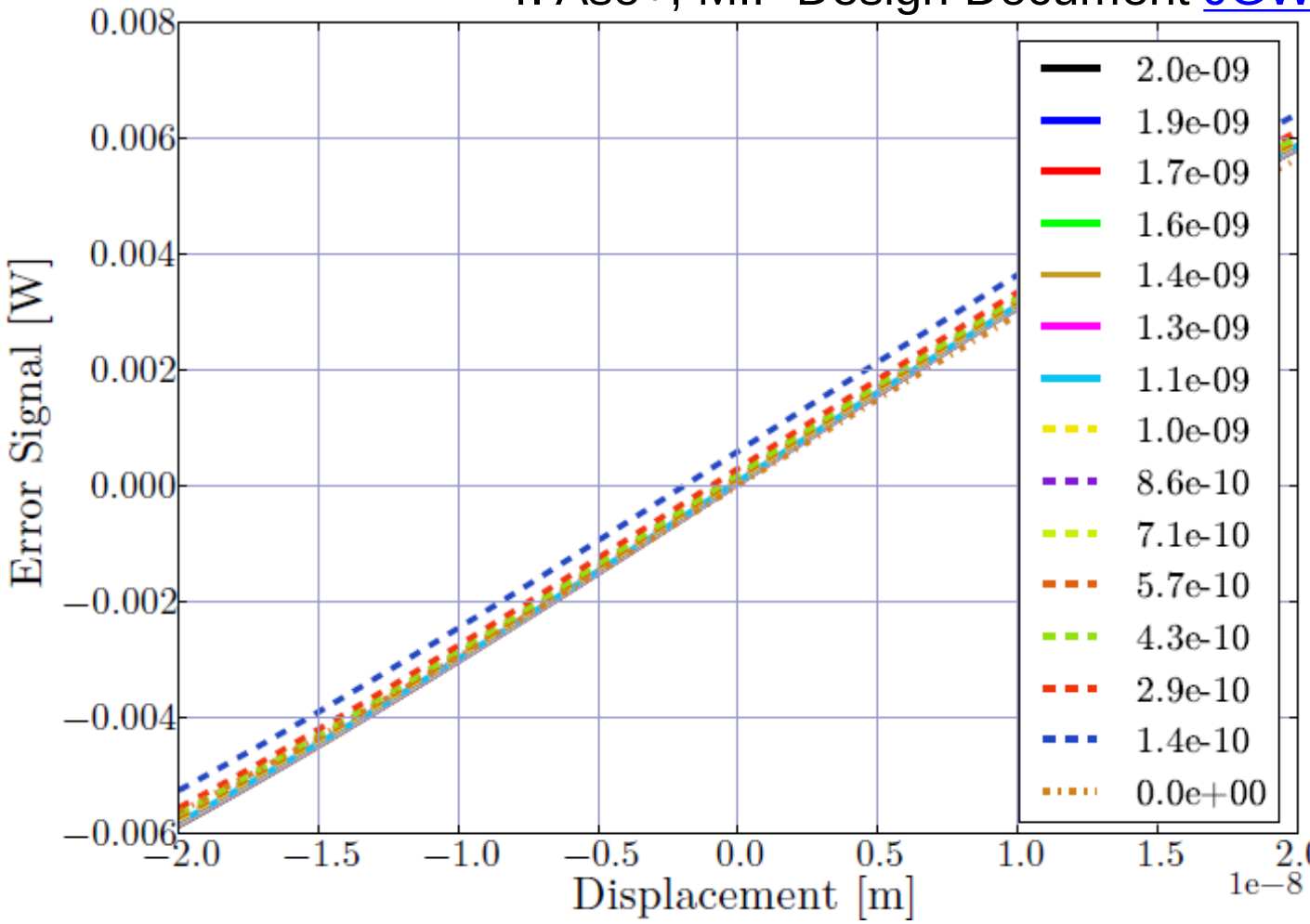

MICH Error Signal in NRS case

- MICH zero crossing shifts less than a nm with CARM offset

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