

WP1 Secondment Task 1.2

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- **Research Period:** 2025/12/01 – 2025/12/12
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Overview of your research

- Non-linear optics studies done in the past during 2024 commissioning
- Measured chromaticity & amplitude detuning at various tunes
- First observation of sextupolar resonance driving terms (RDTs)
- Discrepancies with model in sextupolar & octupolar field → model to be better understood

Research Plan

- RDTs: turn-by-turn measurements at working points near sextupolar resonances; horizontal & vertical excitation with increasing kick strength/offsets
- Chromaticity: vary RF frequency to create momentum offsets
- Amplitude detuning: progressively stronger kicks on same beam; analyze tune shifts
- With varying configurations: with/without cancel coils, crab waist sextupoles, NL collimator sextupoles to see their effect

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Similar to the one to send to Super KEKB ICB