

Recent beta-beating studies during squeeze

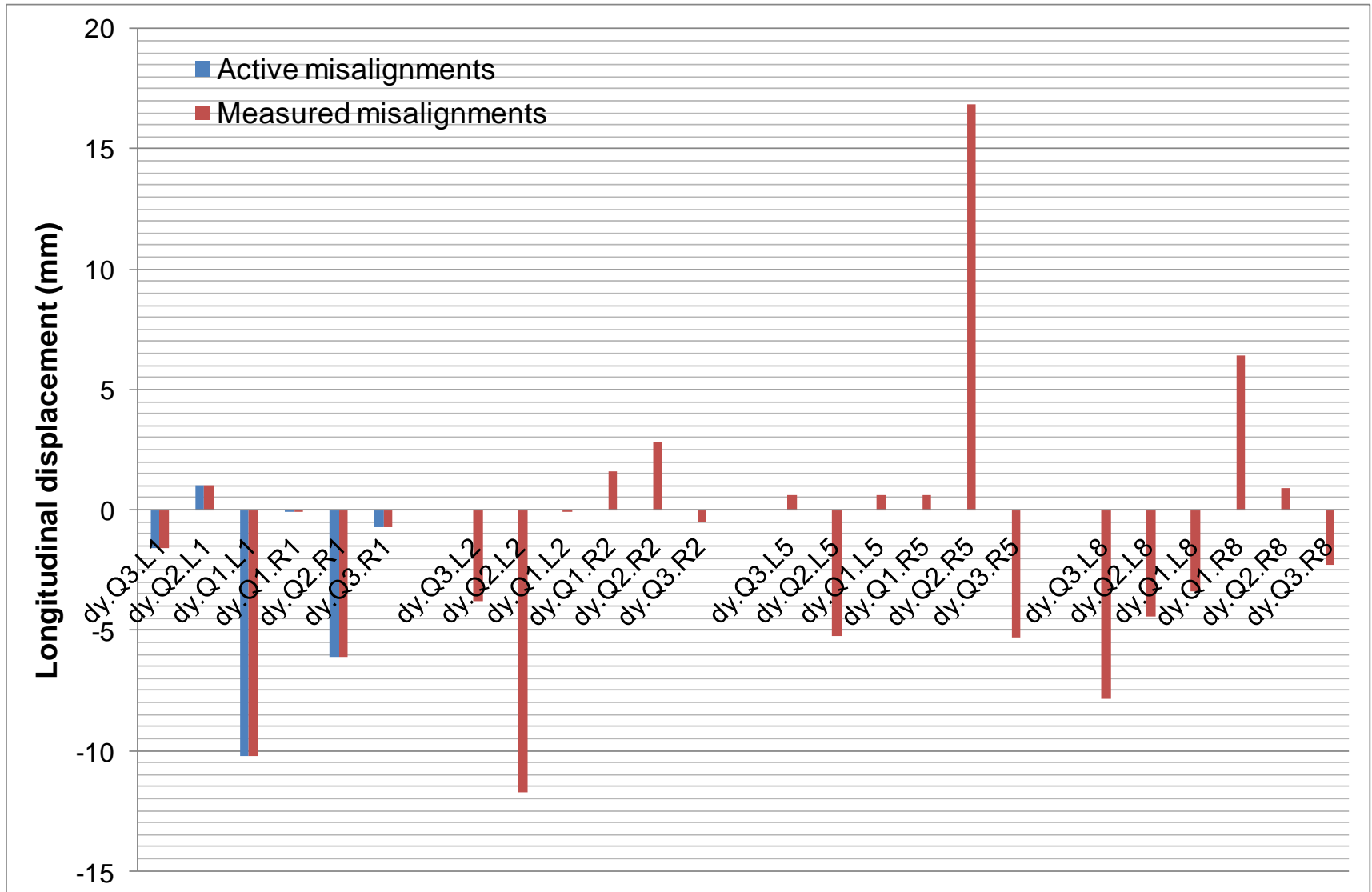
M. Giovannozzi

- Introduction
- Longitudinal displacement and IR1/5
- Preliminary results for IR8

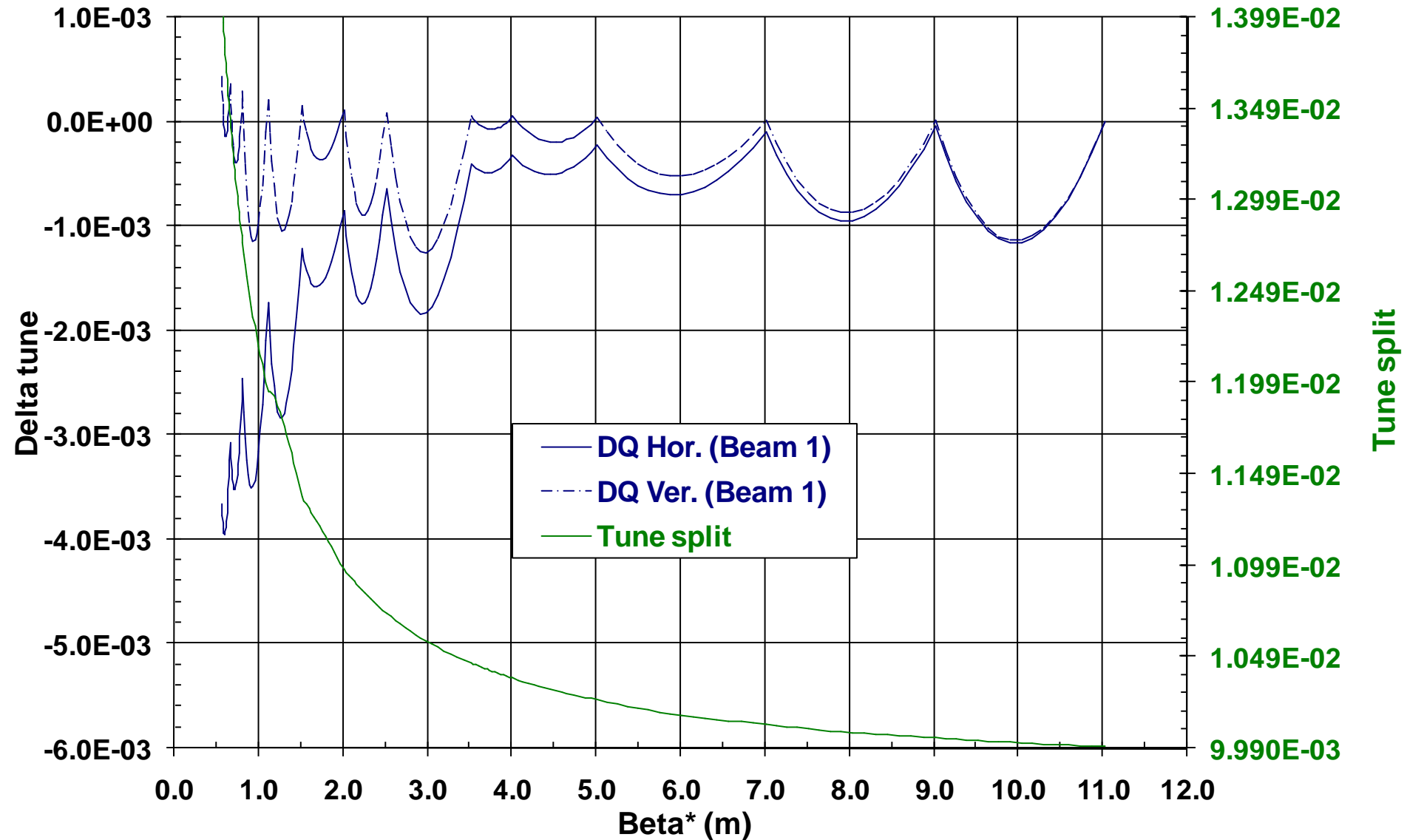
Introduction

- Analysis of beta-beating and other optical parameters during the squeeze already presented (IR1/5), based on the squeeze sequence computed by SF.
- Results presented also at the LHCCWG.
- No need to add more points to those already available. Some refinement for one case (Beam 2, β^* about 1-2 m).
- Present study:
 - Repeat in the presence of longitudinal misalignment of triplet quadrupoles (to complete the study for the LTC)
 - Repeat the study for IR8 (optical solution provided by YP)

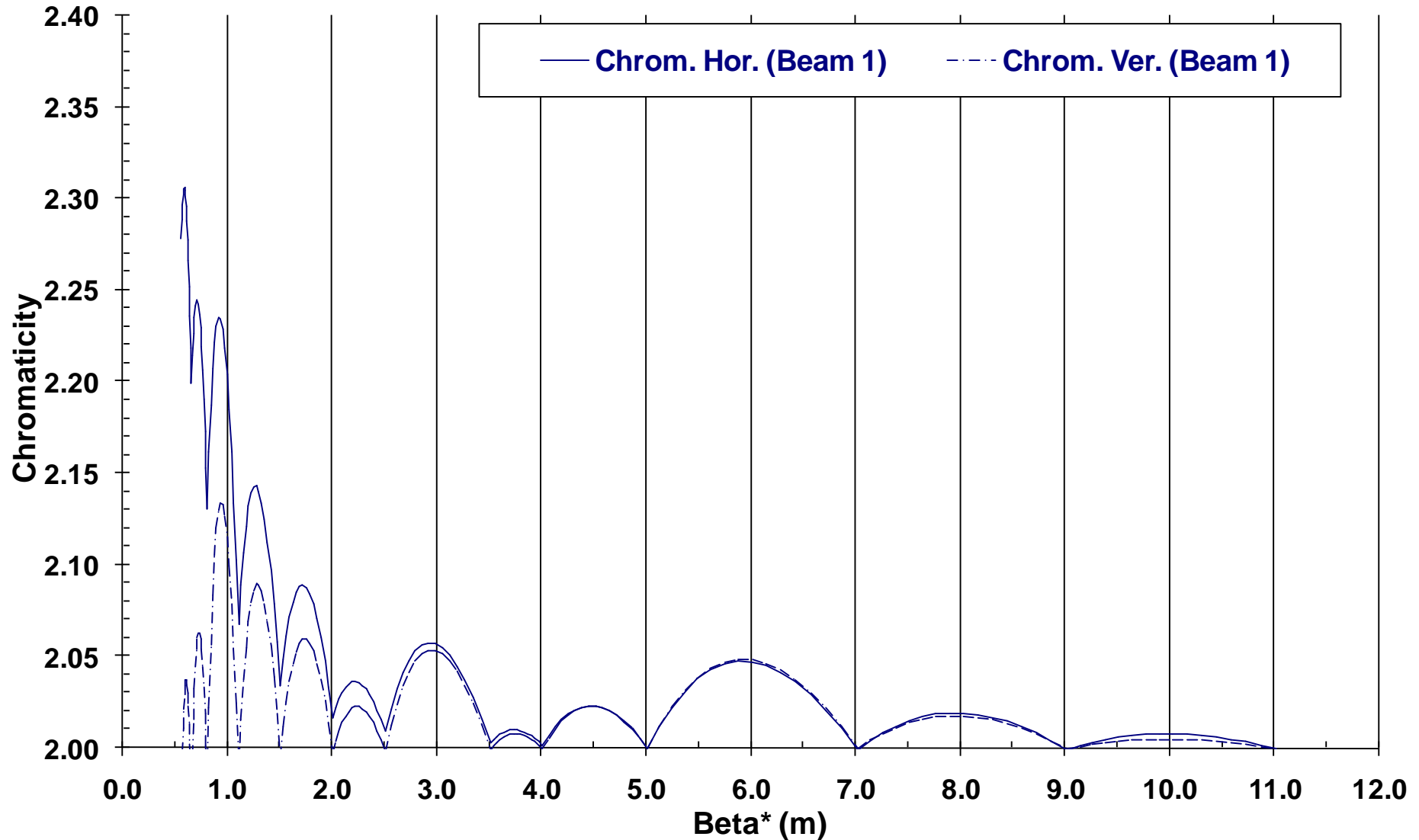
Analysis of IR1 - I



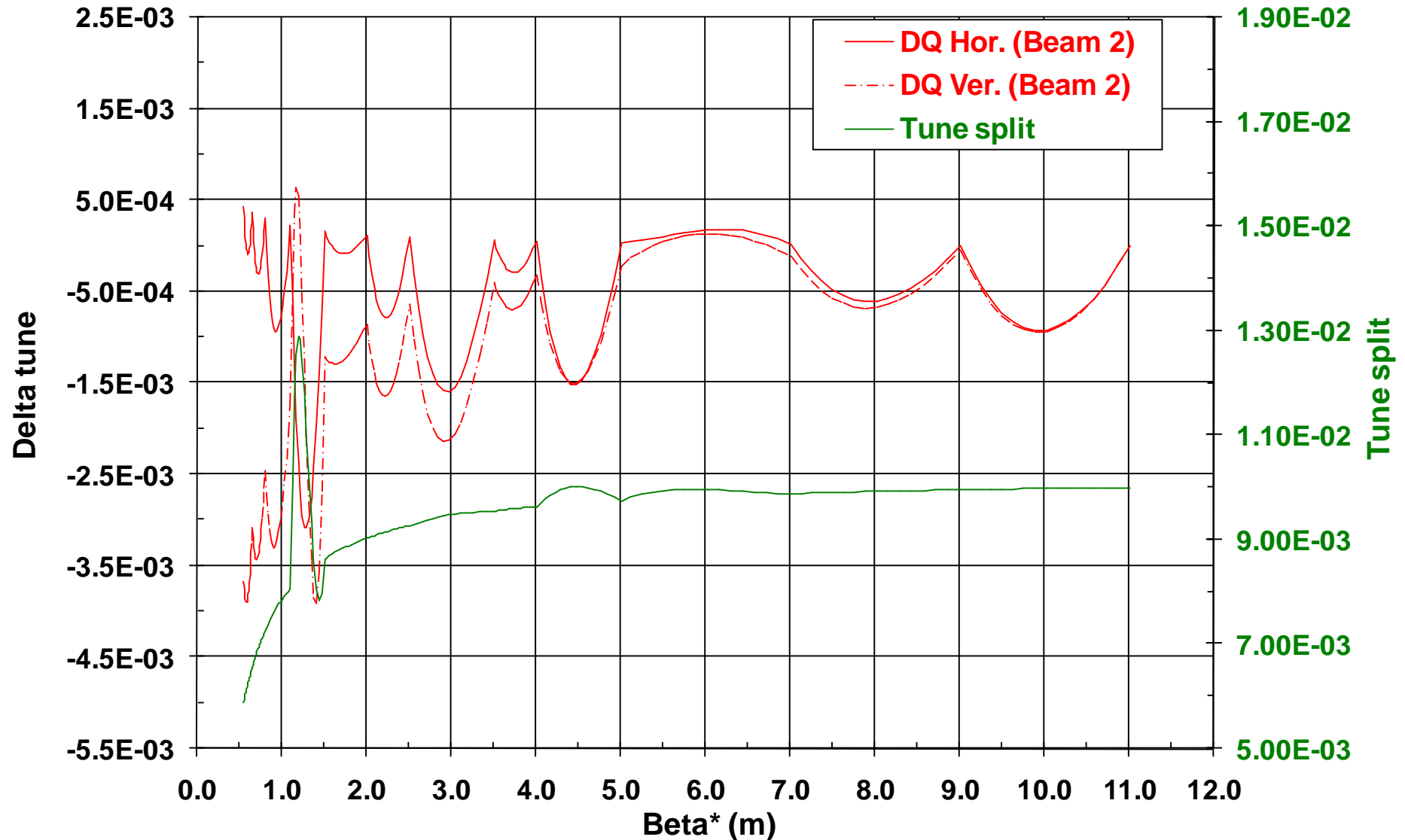
Analysis of IR1 - II



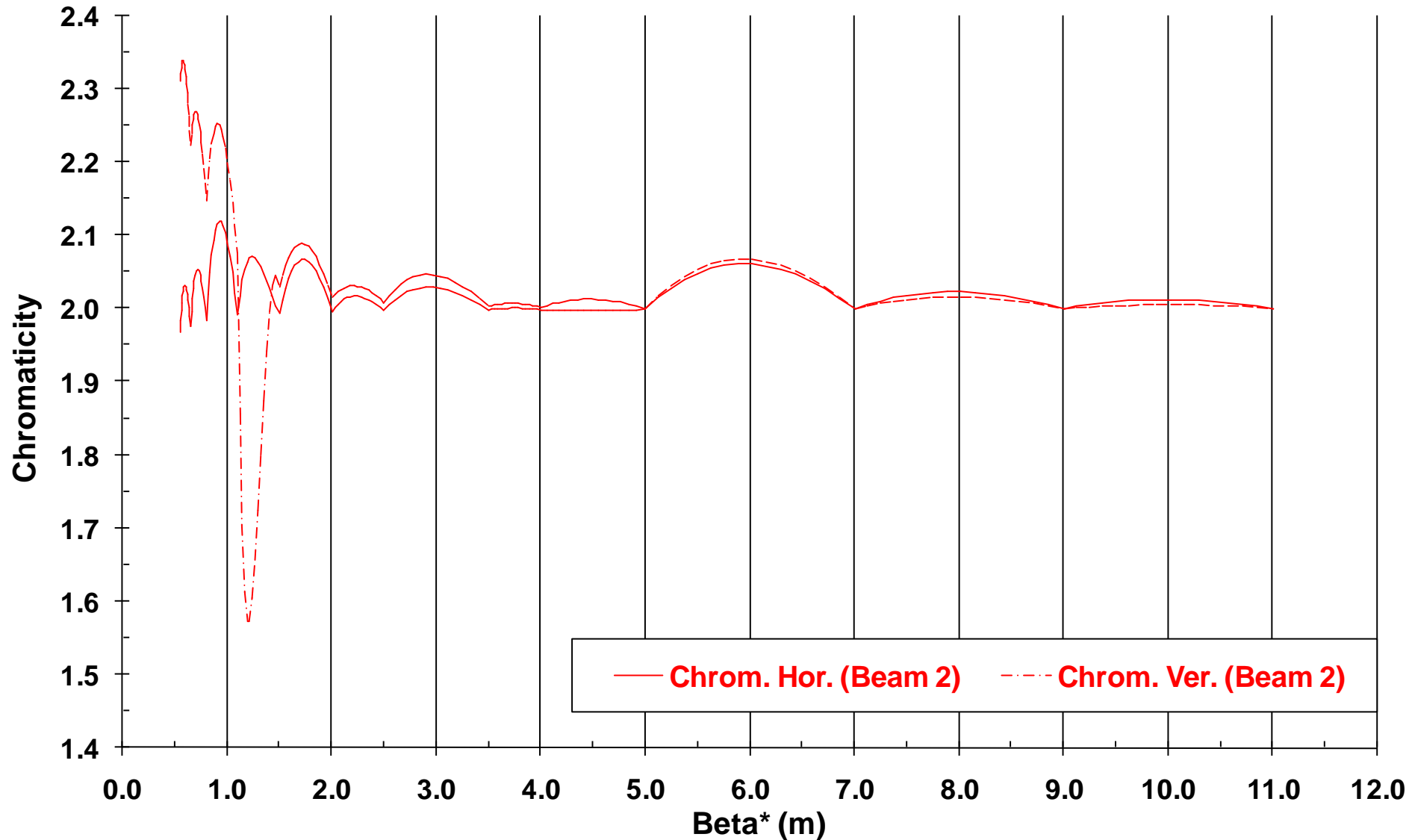
Analysis of IR1 - III



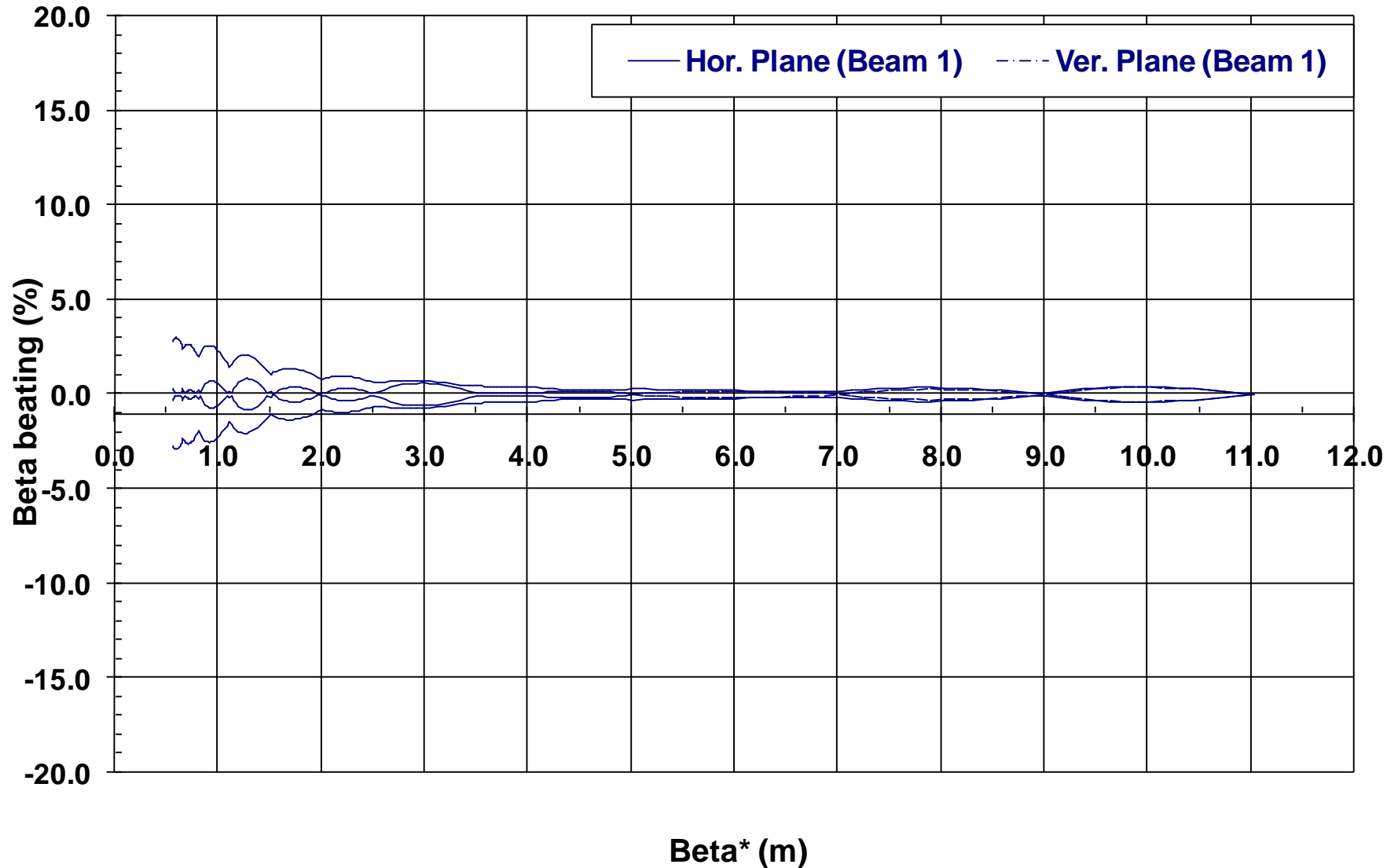
Analysis of IR1 - IV



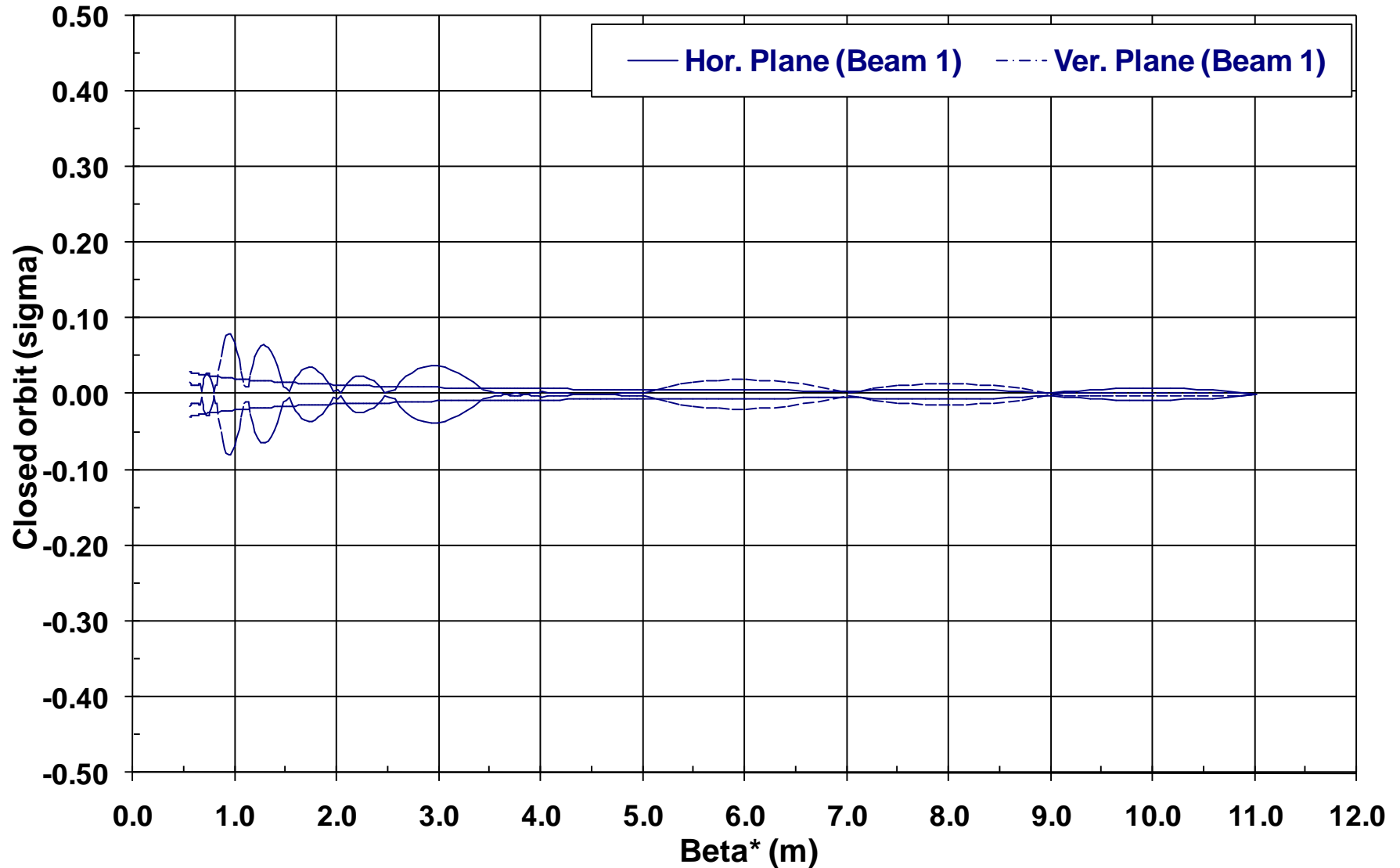
Analysis of IR1 - V



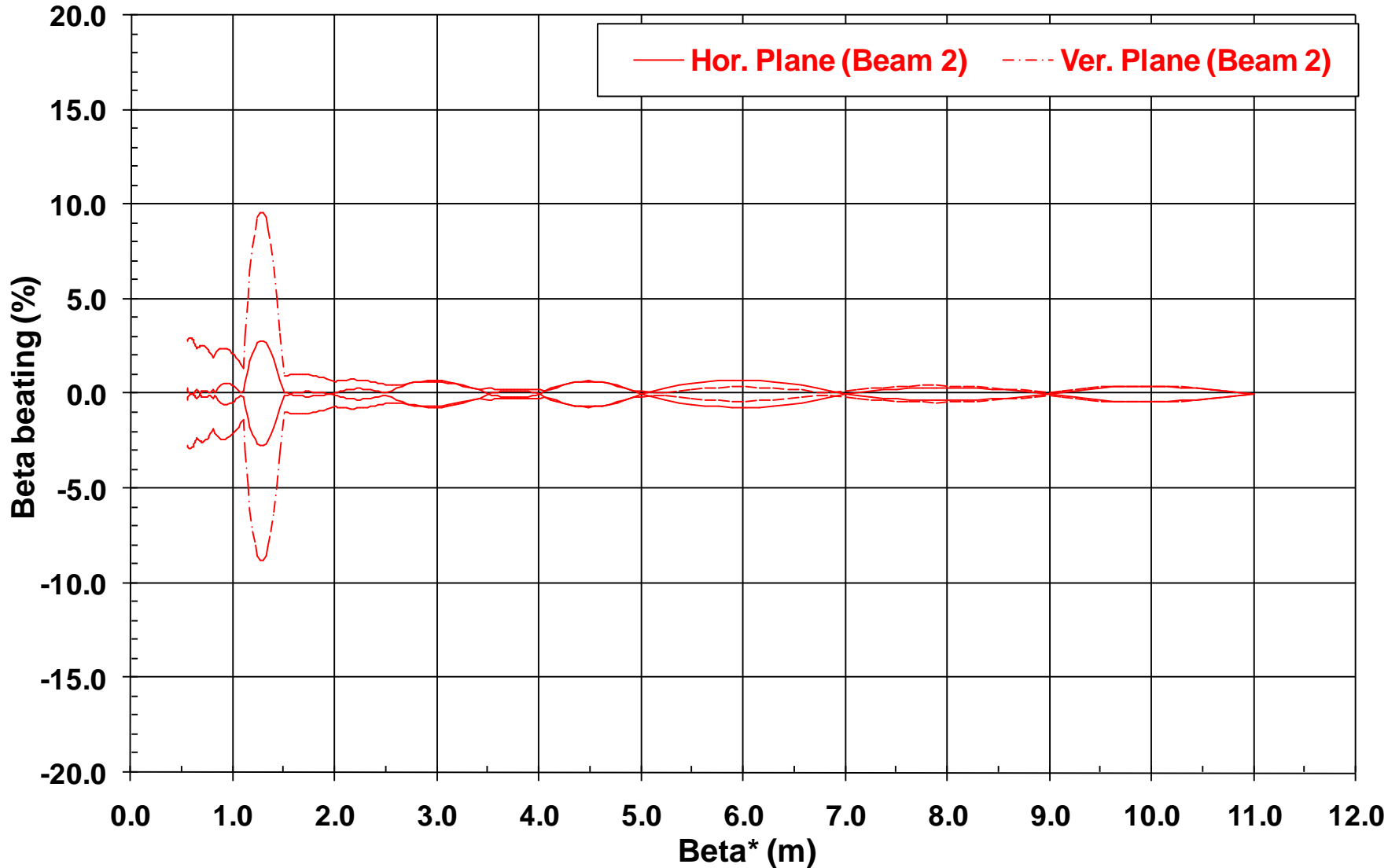
Analysis of IR1 - VI



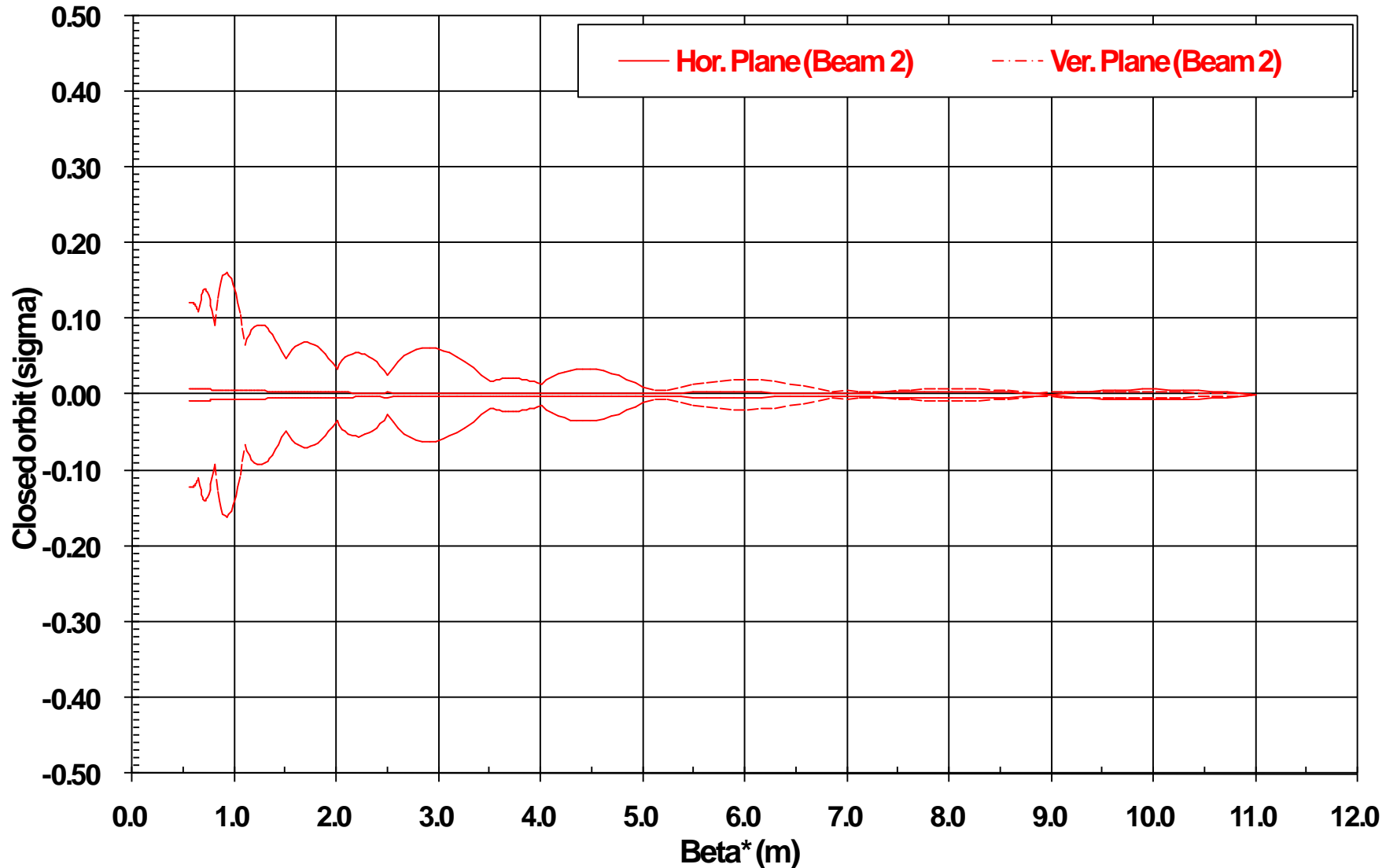
Analysis of IR1 - VII



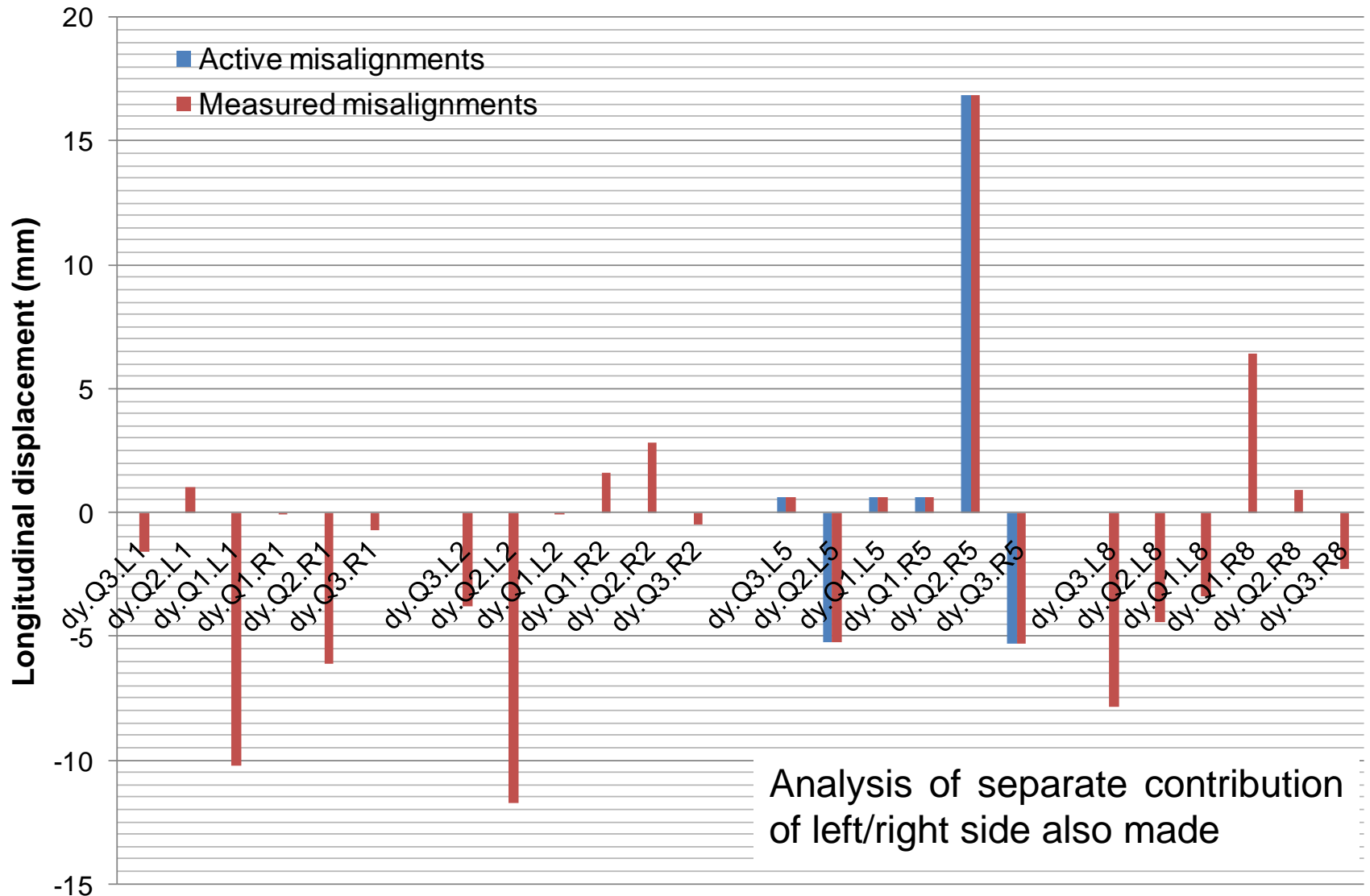
Analysis of IR1 - VIII



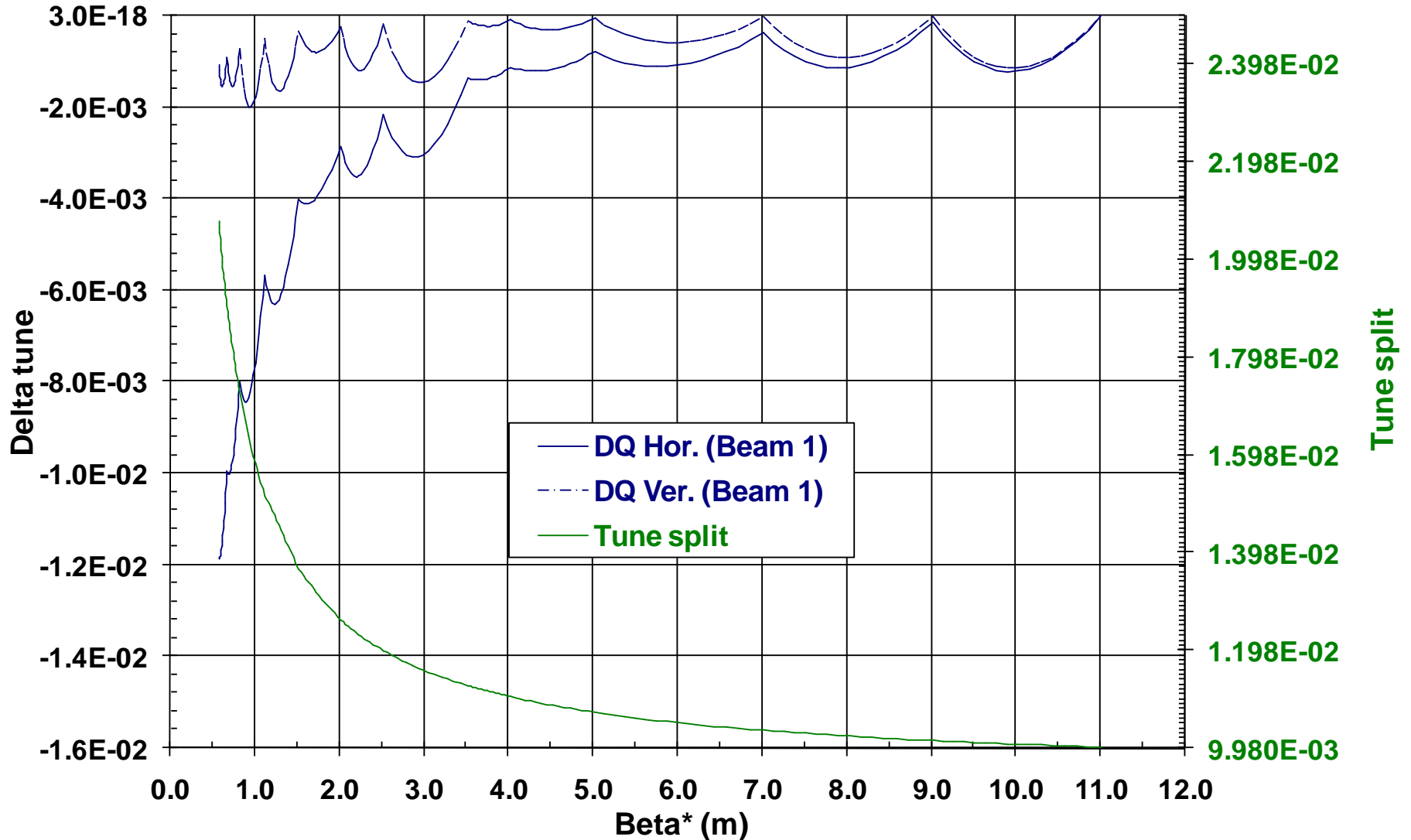
Analysis of IR1 - IX



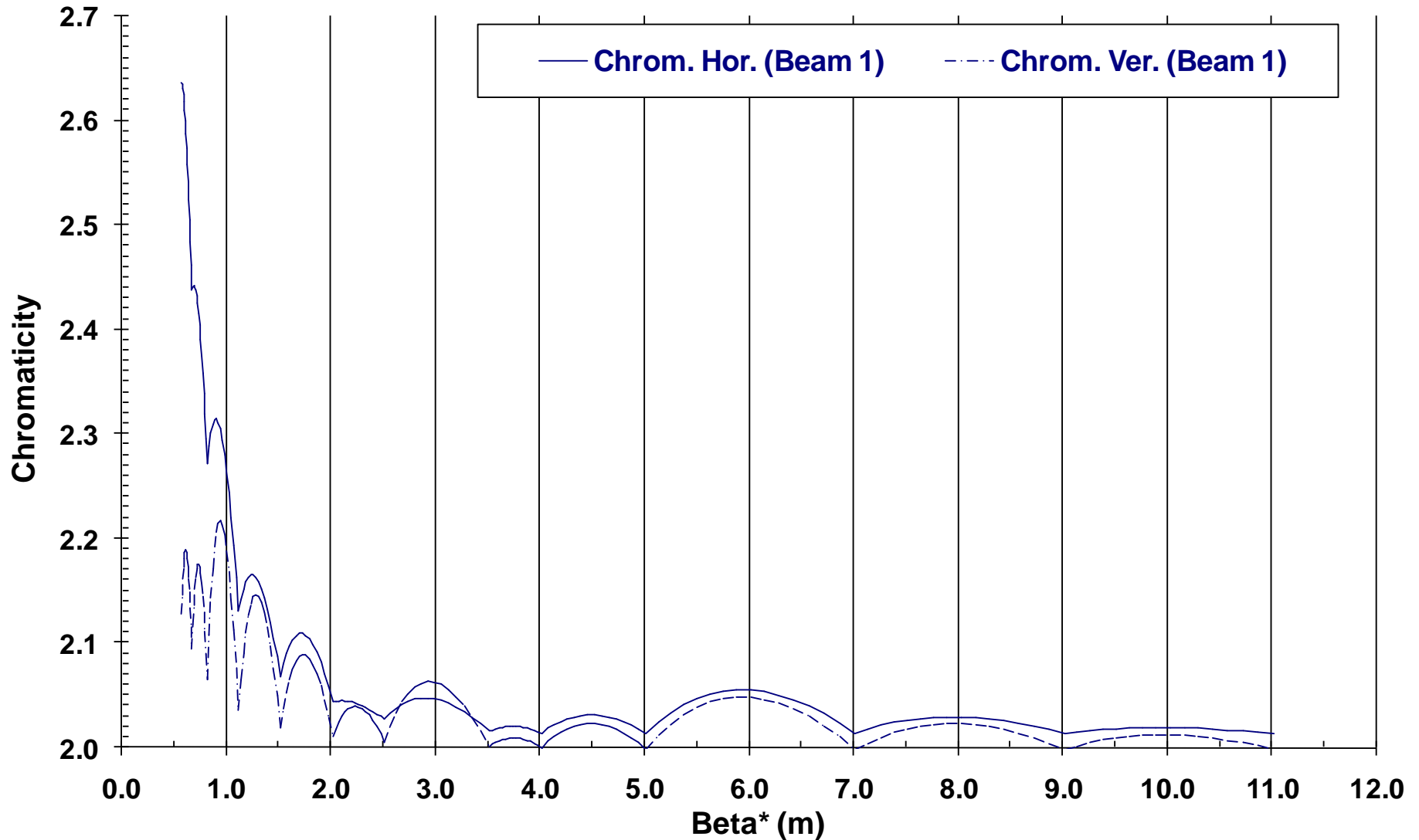
Analysis of IR5 - I



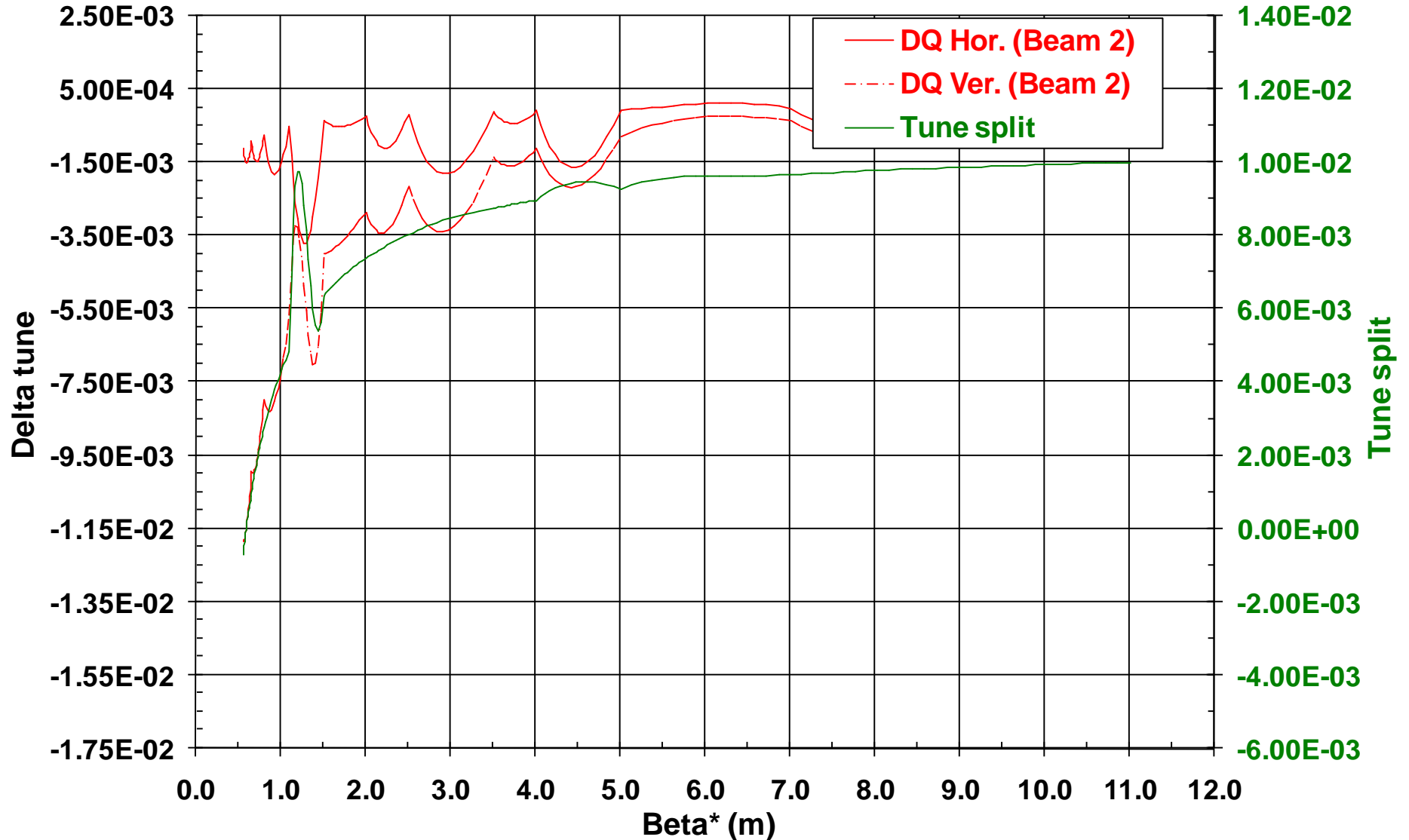
Analysis of IR5 - II



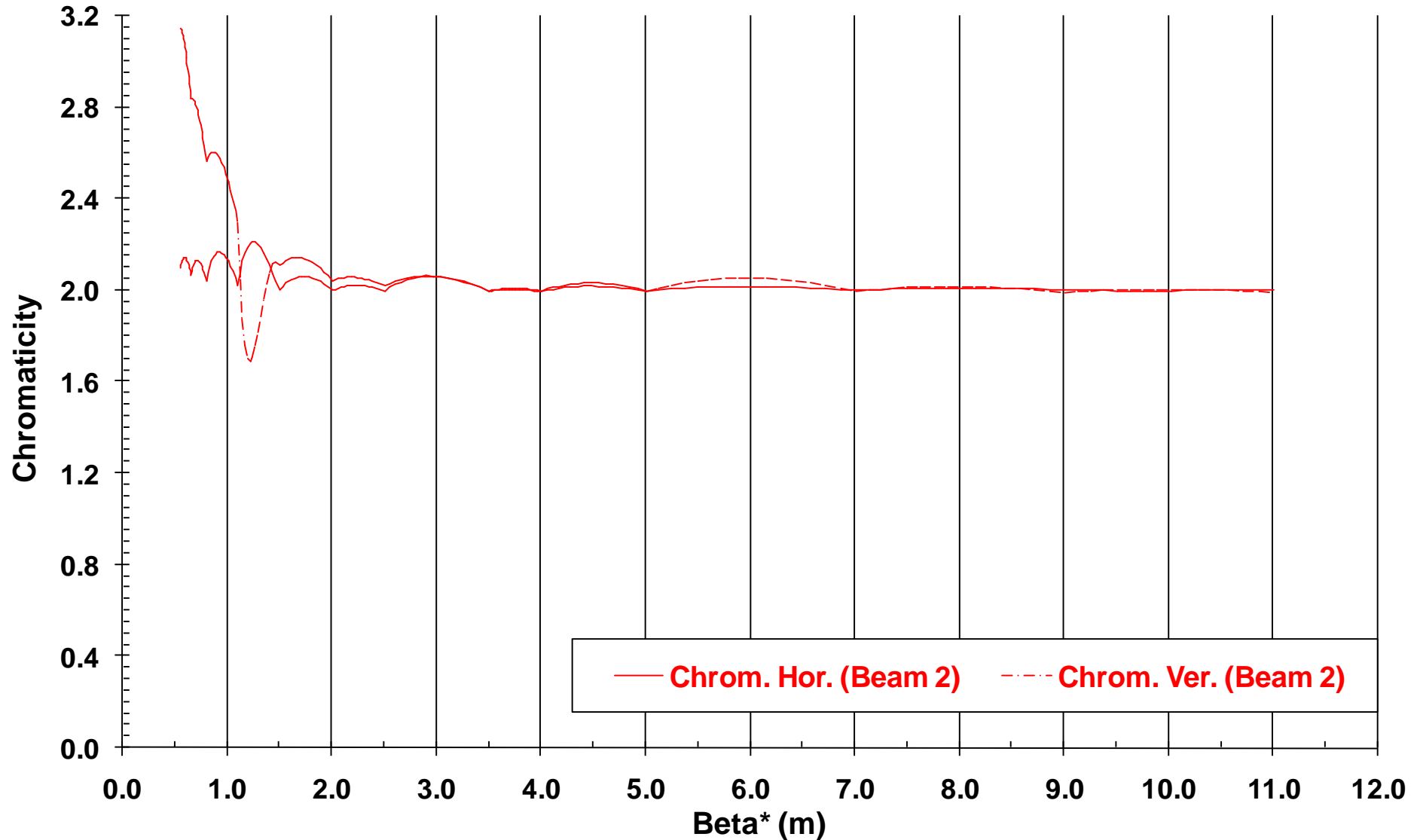
Analysis of IR5 - III



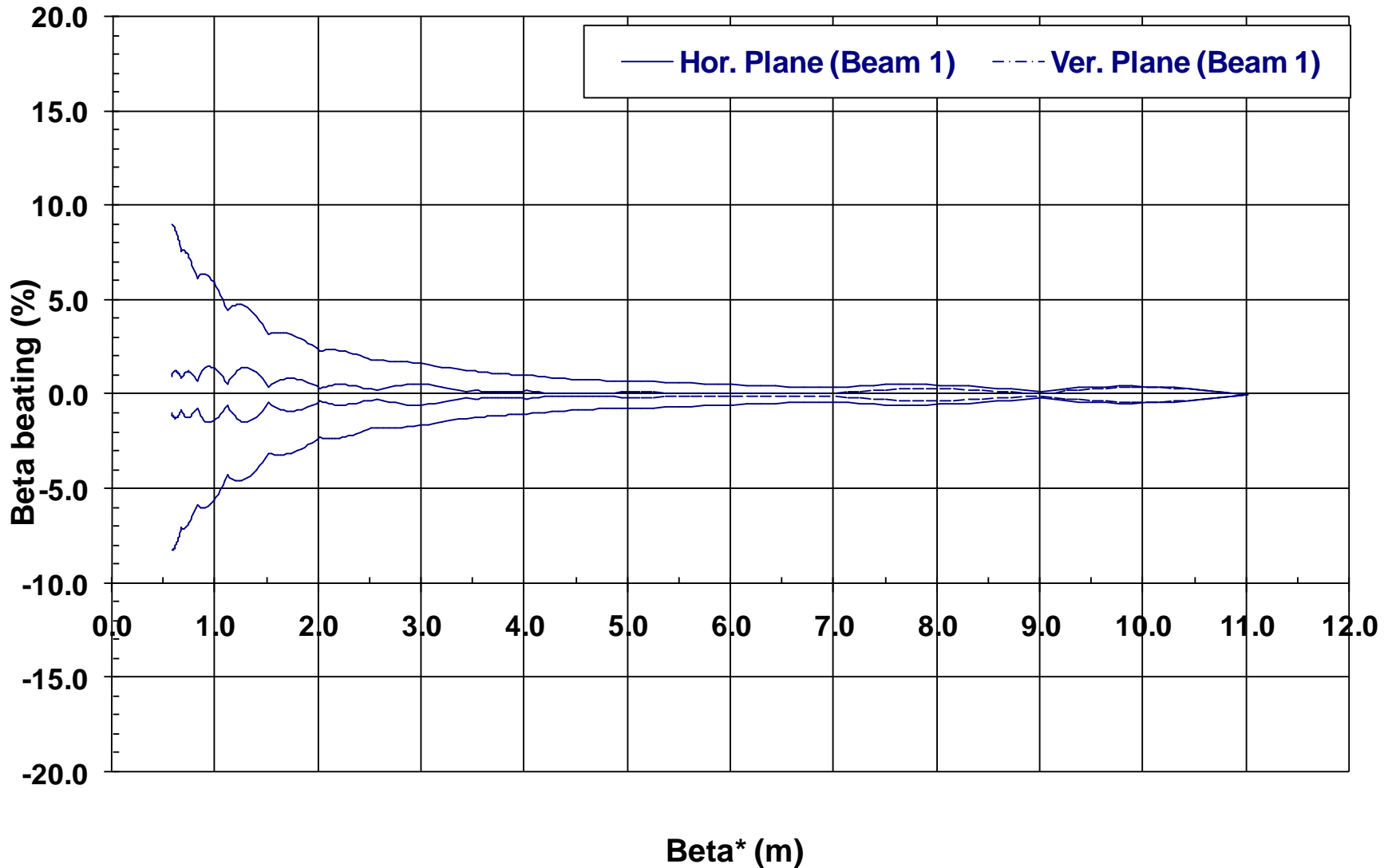
Analysis of IR5 - IV



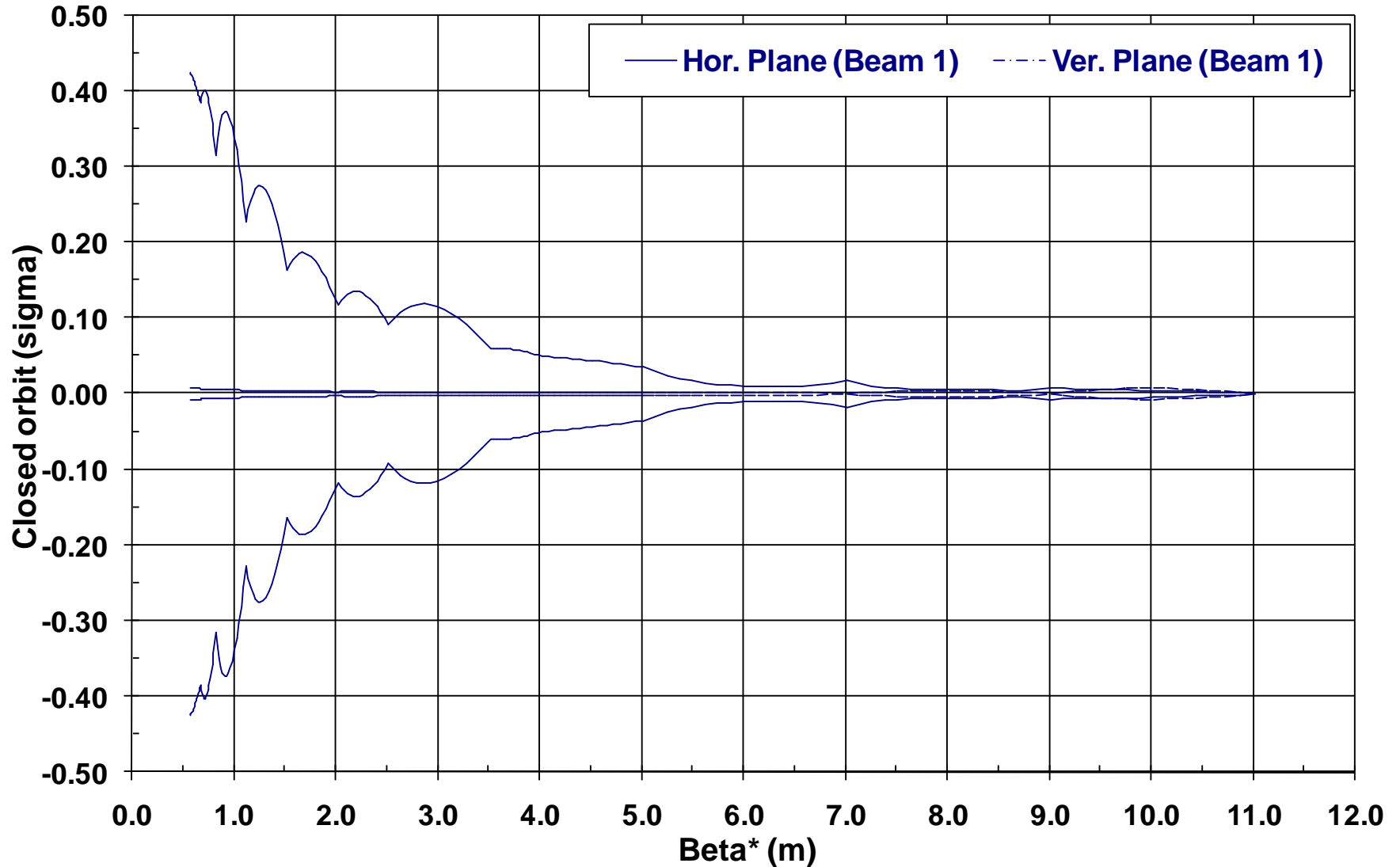
Analysis of IR5 - V



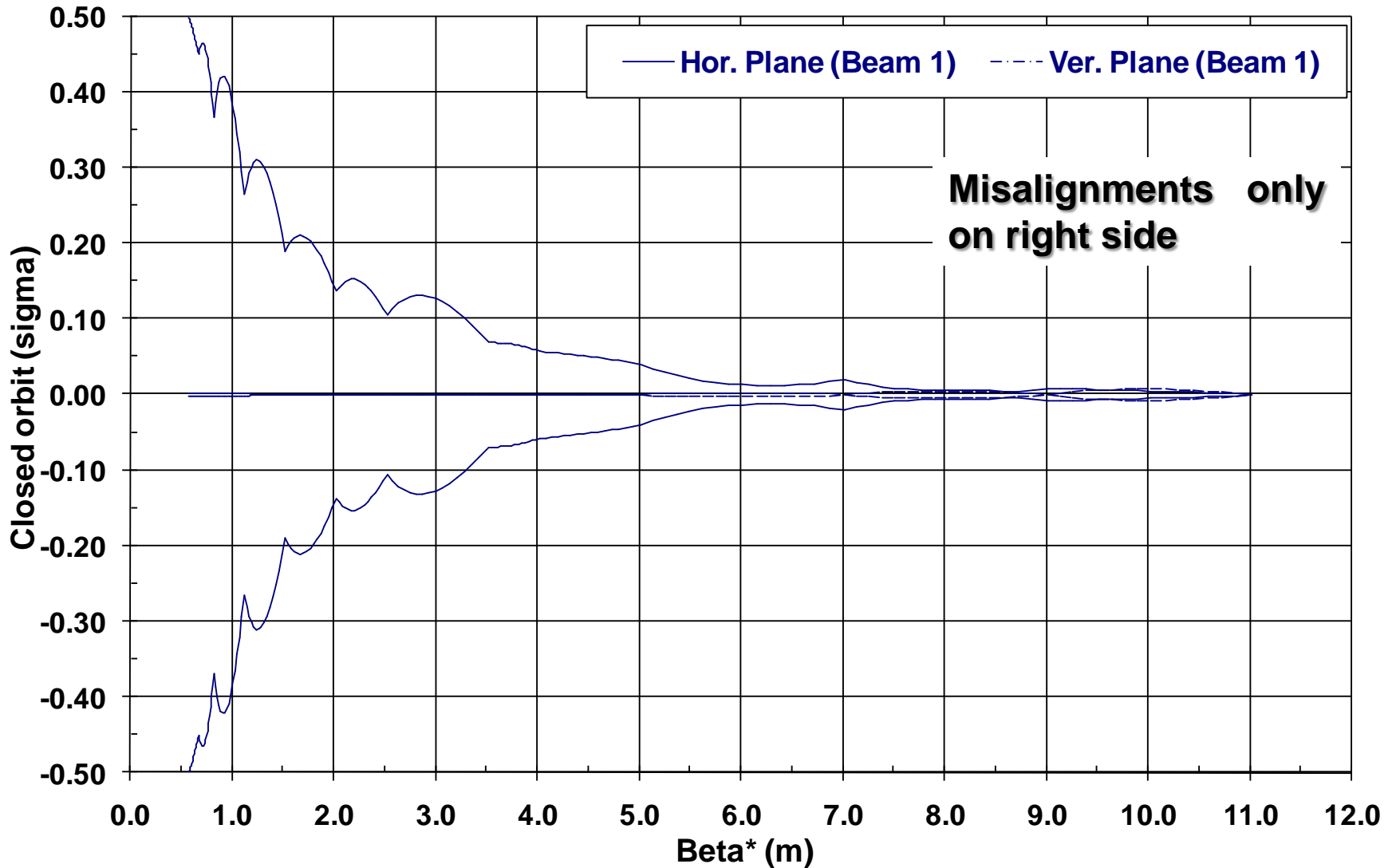
Analysis of IR5 - VI



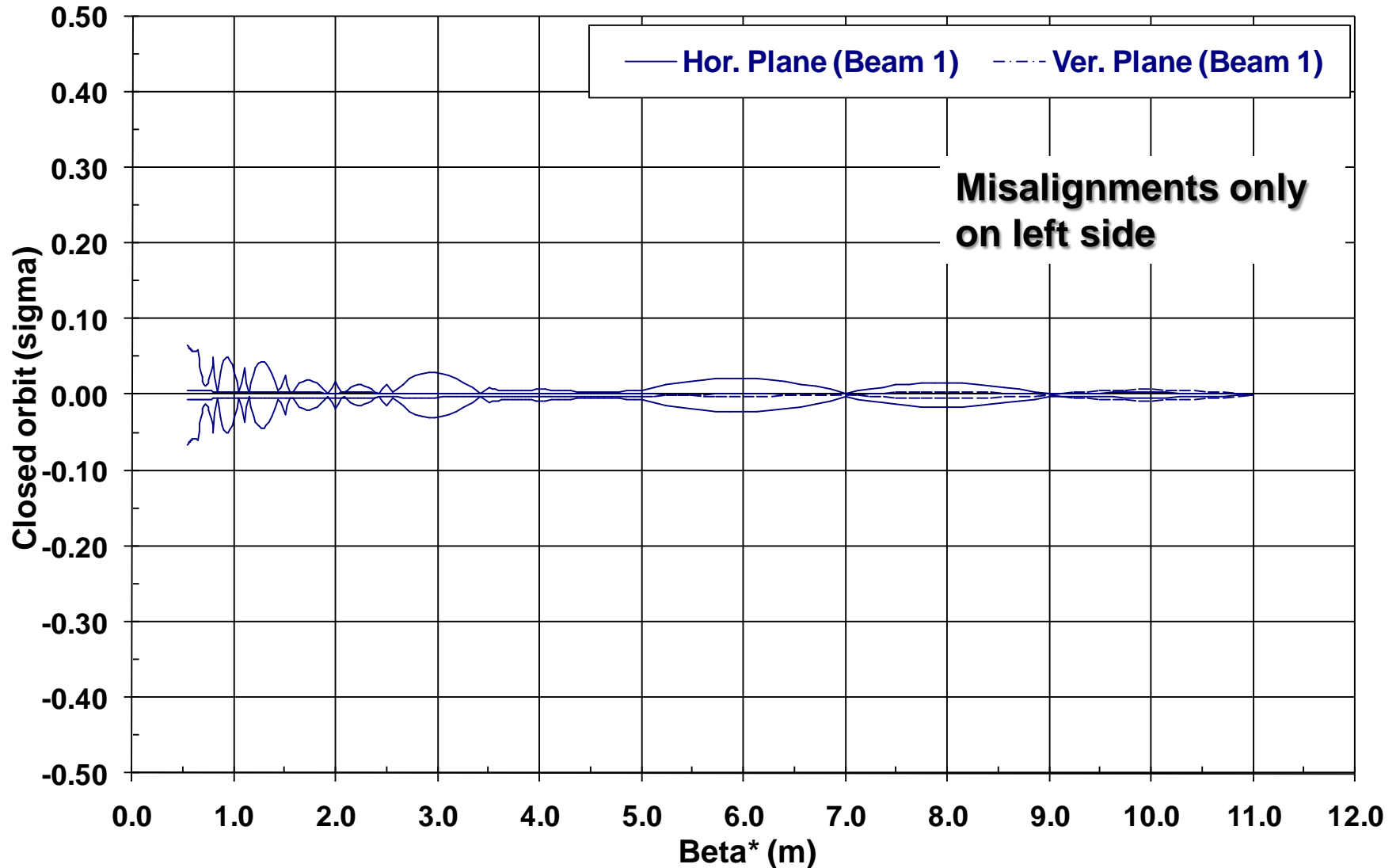
Analysis of IR5 - VII



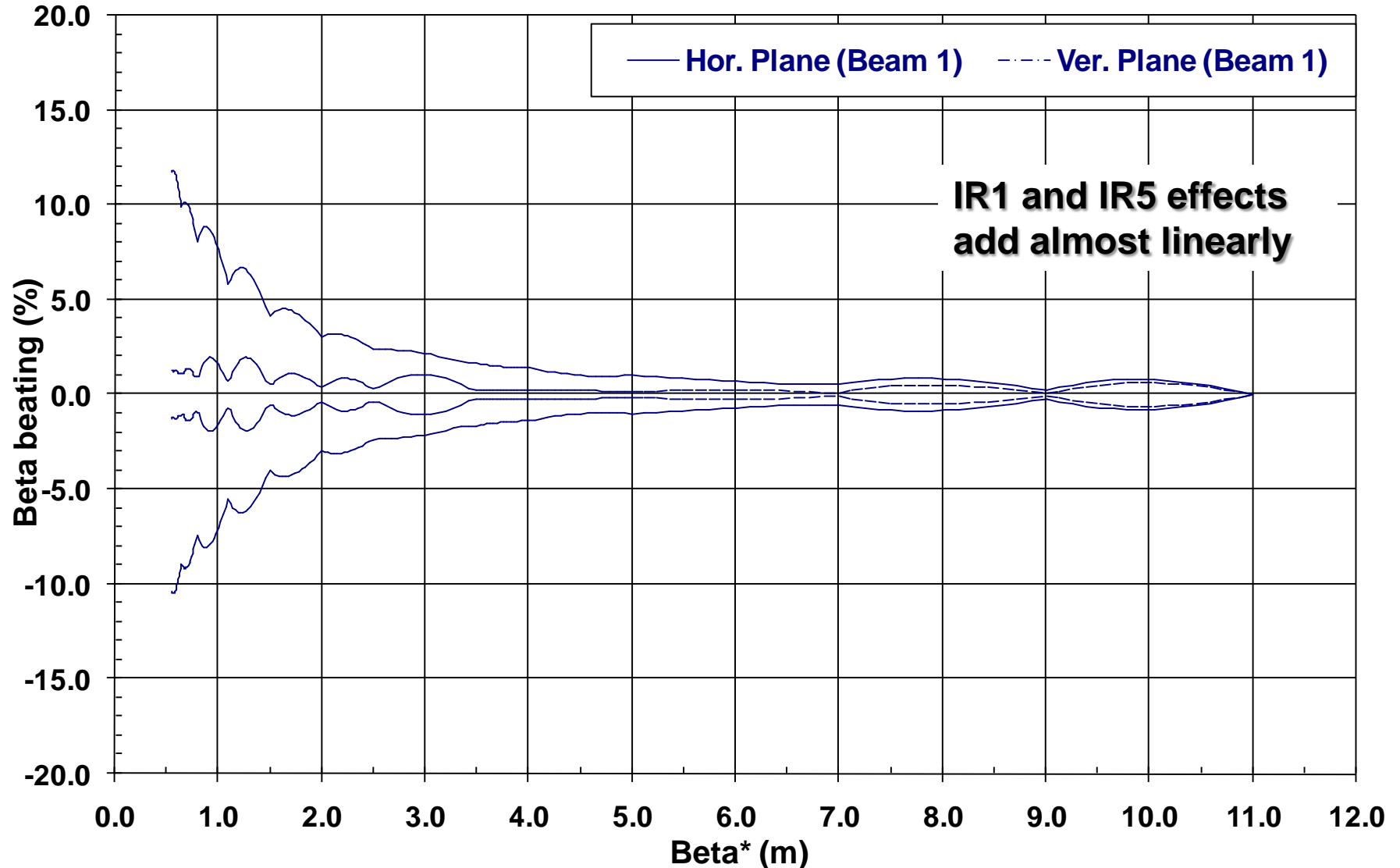
Analysis of IR5 - VIII



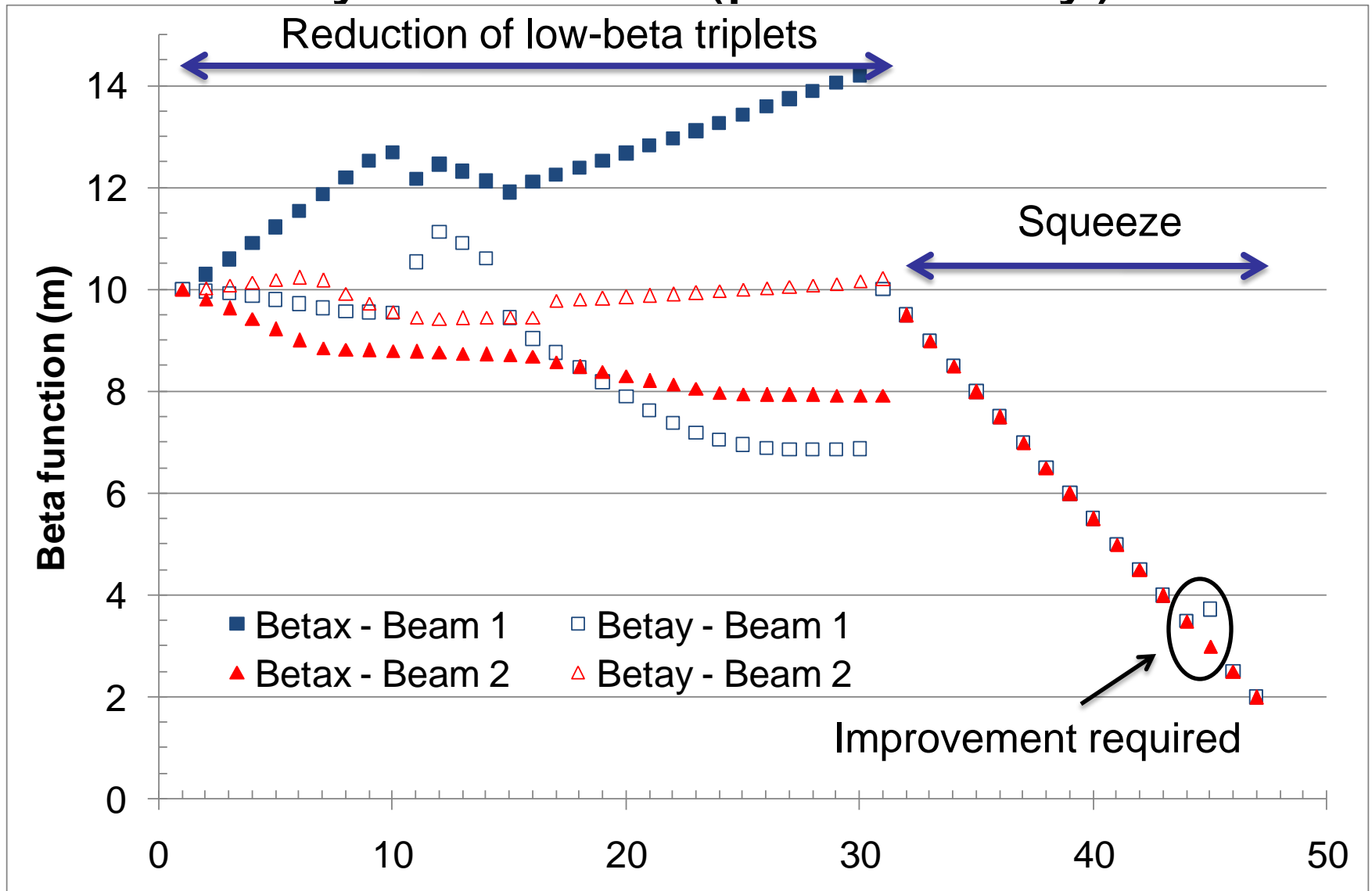
Analysis of IR5 - IX



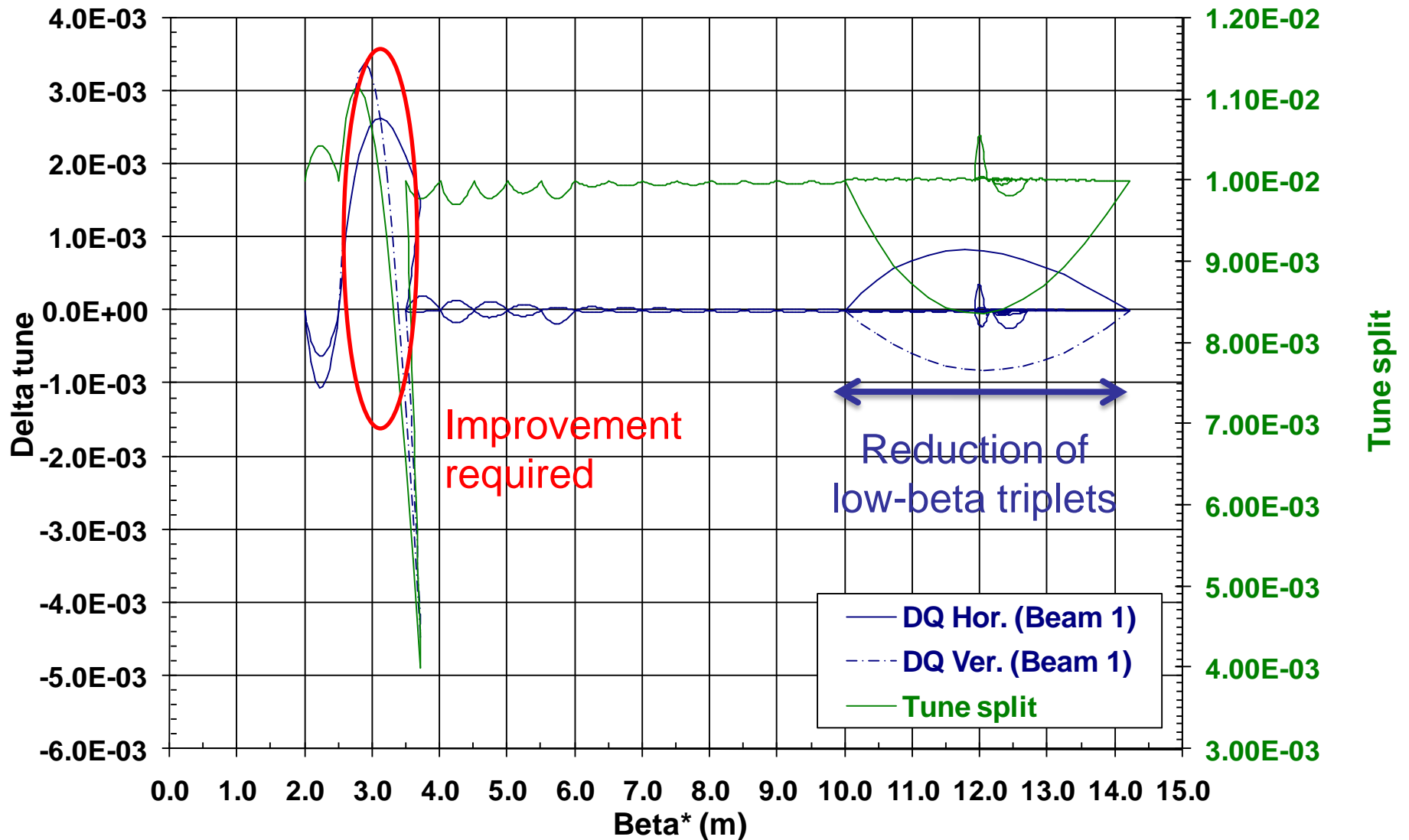
Analysis of IR1+5 - I



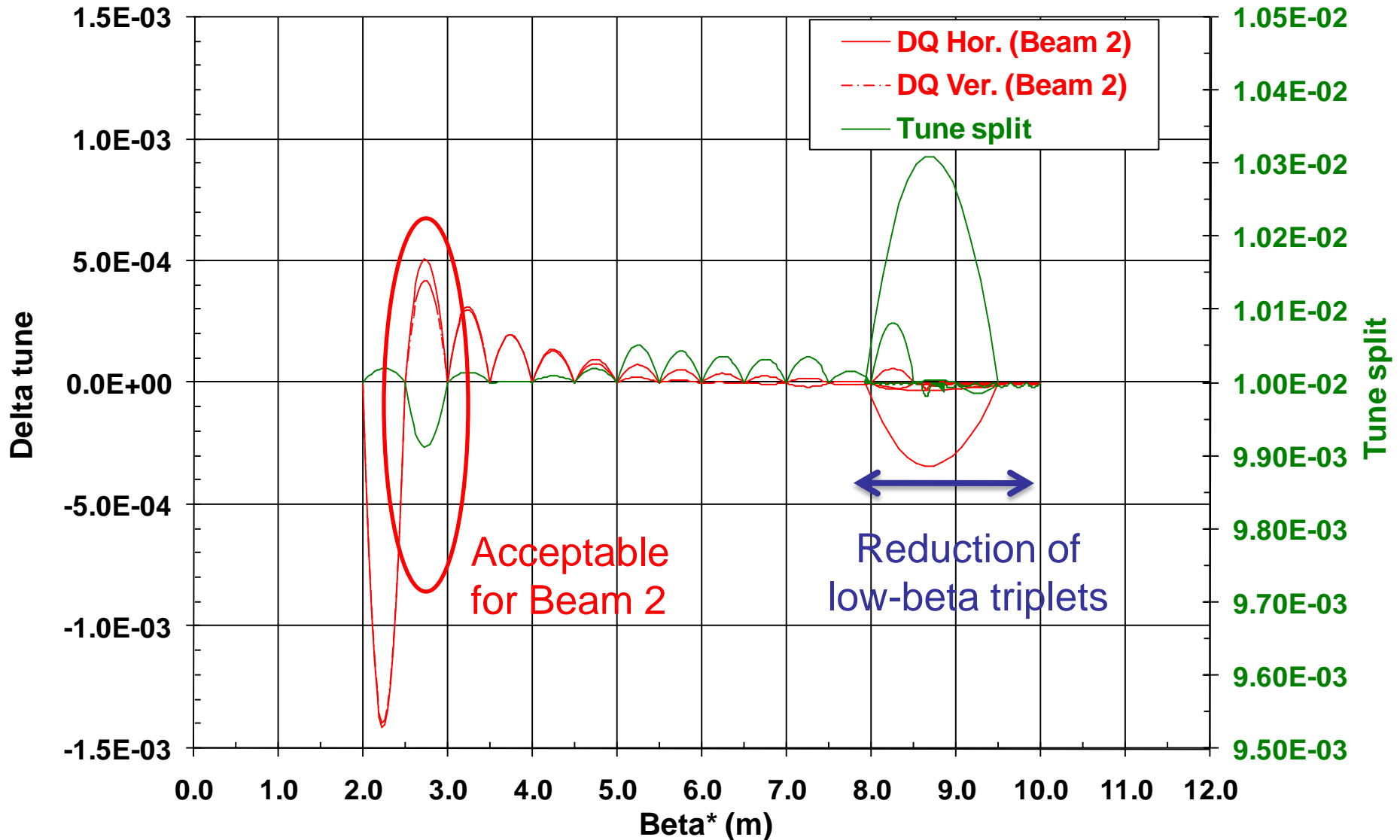
Analysis of IR8 (preliminary) - I



Analysis of IR8 (preliminary) - II



Analysis of IR8 (preliminary) - III



Outlook

- Between 3-4 m the longitudinal misalignments of low-beta triplets should be compensated (re-matching. For $\beta^*=0.55$ m this was already done - SF).
- Impact of huge misalignment in IR5 right clearly seen.
- Improvements to be done in squeeze solution for IR8
 - Reduction of triplets strength: control β^* variation (in particular at the end of the process)
 - Squeeze: improve between 4-2.5 m (in particular for Beam 1).