Verification of the Simulations

Introduction

- The verification of the predictions is essential part of the studies
- The simulations are based on models for the imperfections and machine components, e.g.
  - Ground motion
  - Wakefields
- Simple comparisons of codes can help ensure that the models are correctly implemented

Correctness of the Models

- Correctness of the models is much more difficult to ensure than the correctness of the implementations
- Ultimate verification is the experiment
  - But in practise this does often not work, e.g. the difficulties in the electron cloud studies
- Combined effort can help to avoid missing an important effect

Some Questions

- Can we suggest experiments to prove the codes?
  - ATF2
  - Beam-based alignment may be difficult
  - Bumps may be possible at some places
- Can we animate people to help us ensure that we did not forget something?
  - A workshop

What can Simulation Do?

- What simulations do we know we should perform but we did not and maybe we even do not know how to perform them?

- Would it help to make client server experiment?
    - One code simulates another code corrects