

Review of SCEC Cybershake Wiki pages

https://strike.scec.org/scecpedia/CyberShake_Study_21.12

https://strike.scec.org/scecpedia/CyberShake_Study_18.8

https://strike.scec.org/scecpedia/CyberShake_Study_17.3

https://strike.scec.org/scecpedia/CyberShake_Study_15.12

Structure

The documentation format has changed somewhat since Cybershake Study 17.3. The recent ones, while flexible, maintain the following structure.

1. **Introduction:** This section provides an overview of the CyberShake study and its objectives.
 - a. Status : If it has been completed and when paused/resumed/completed
 - b. Data Products: Link to the data produced from the study
2. **Methodology:** Describes how the study differs from older studies.
 - a. Science Goals : Scientific contribution aimed by the study
 - b. Technical Goals : Computational challenges for the study
 - c. Sites: Location of sites studied by the study, accompanied by a map showing the locations of stations considered.
 - d. ERF (Optional) / Faults considered
 - e. Velocity Models: The details of Velocity Model
 - f. Computing resources utilized: What HPC used, how many nodes? Core hours used etc.
3. **Results:** The results section of each study presents the results of that particular study.
 - a. Comparisons of Hazard curves at certain sites
 - b. Comparisons of Seismograms against older studies
 - c. Velocity model cross section : Similar to [NZVM v2.07 vs 2.08: Cross-sections](#) (via NZVM code [Link](#)) with horizontal plots at various depth level (eg. [Link](#) : plot_items over Vp, Vs values)
 - d. PSA comparisons , PSA bias etc
 - e. Comparison between output from two different HPC systems (Blue Waters vs Titan)
 - f. Collection of other plottings produced per requests (eg. posted on slack during verification)
4. **Discussion:** This section discusses the results presented in that particular study and their implications.
 - a. How the new models developed in the study can be used to improve seismic hazard and risk assessments
 - b. Limitations and future directions.
 - c. Lessons learned : Mistakes, challenges etc.
5. **Conclusion:**
 - a. Summary of the main findings related to ground motion hazard and risk based on the new ground motion prediction models developed in that study
 - b. Recommendations for future research related to improving these models.

Gap Analysis

We have most tools available to produce documentation similar to SCEC Cybershake pages.

Some thoughts:

1. Clear goals - Science goals specified by research team.
2. Verification target: Based on the goal, what do we expect to see from the new Cybershake runs?
3. Plotting tools:
 - a. Map plotting of location of multiple faults specified - No standard script available.
 - b. Velocity model cross section : Workflow can be simplified and incorporated into the main visualisation repo
 - c. Hazard curves: Our Hazard curves are produced via GMHazard, not readily usable for a new Cybershake runs.