



Current Processing at CSEP

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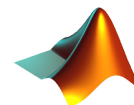


CSEP V1.0

- Based on *RELM* testing center
- Controlled integration environment with standardized software stack



MPICH

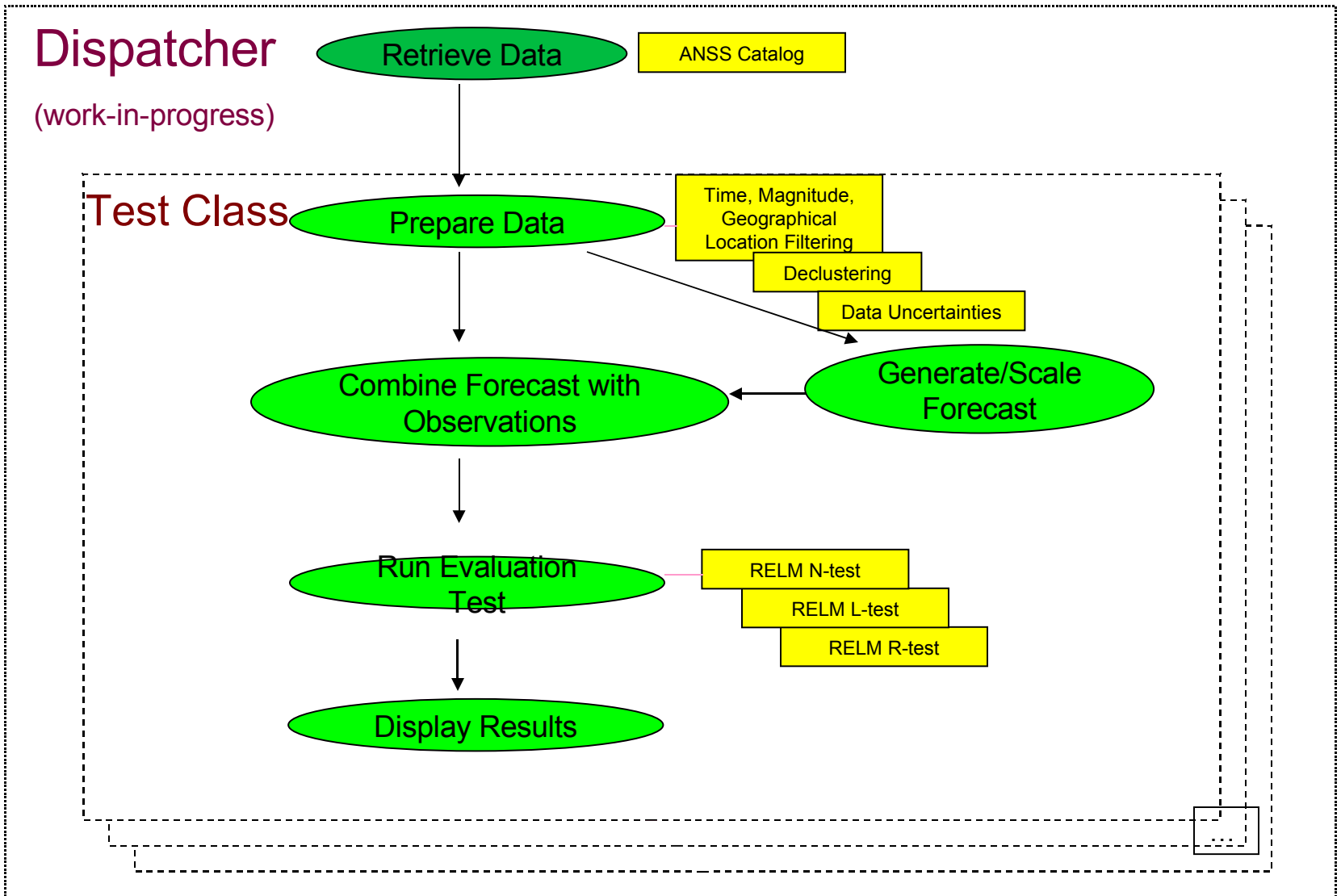


Matlab

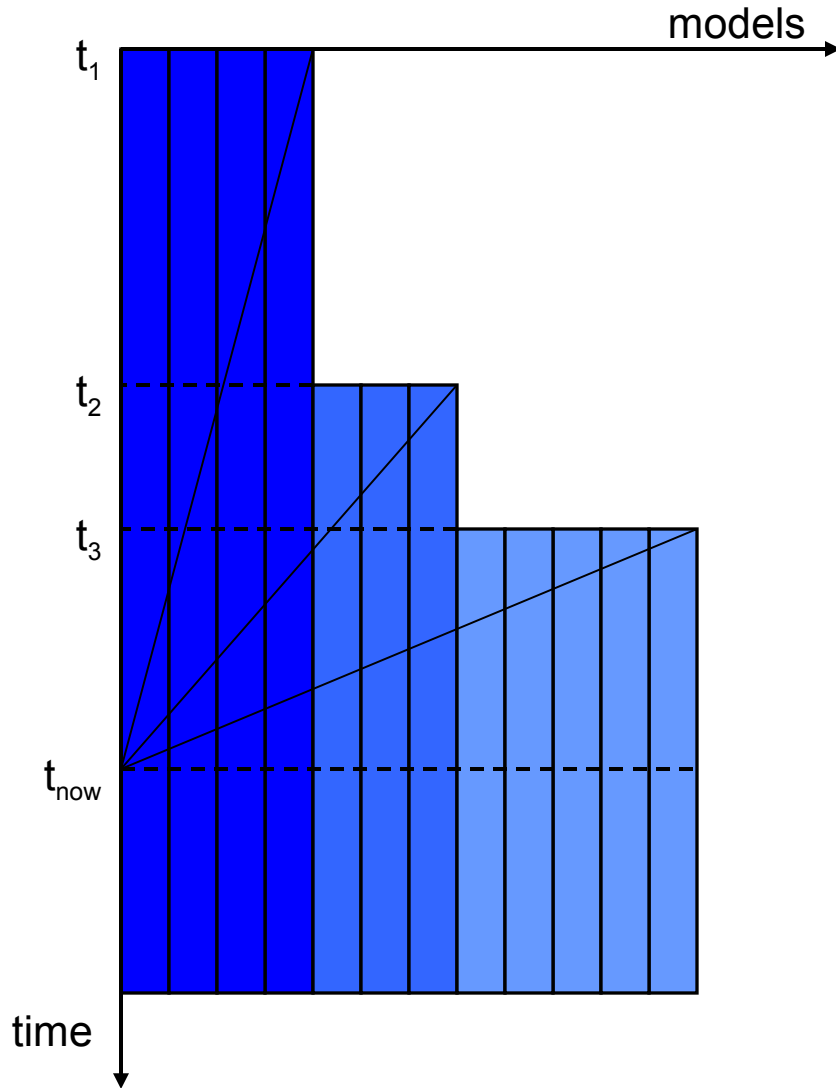
- Focuses on:
 - End-to-end processing
 - Reproducibility of any forecast experiment
- Automated build and test framework



CSEP V1.0 - End-to-End Data Flow



CSEP V1.0 - Test Class



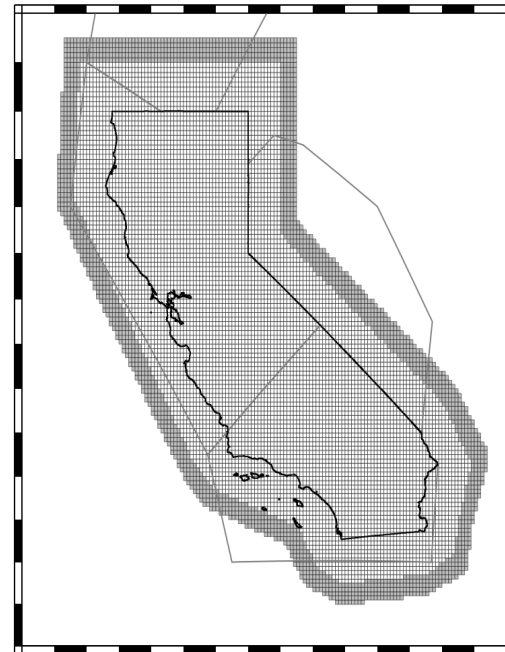
CSEP V1.0 - Retrieve Data

- ANSS catalog data for California Natural Laboratory
 - Using GNU Wget which is a free software package for retrieving files using HTTP, HTTPS and FTP, the most widely-used Internet protocols.
 - ~500Mb in size



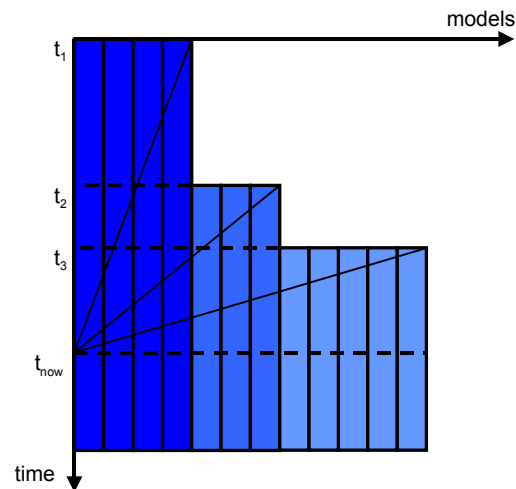
CSEP V1.0 - Prepare Data

- Filter catalog based on
 - Geographical region
 - Longitude, Latitude, Depth
 - Magnitude
 - Time range
- Decluster catalog
 - Reasenberg algorithm
- Apply catalog uncertainties
 - Horizontal error
 - Magnitude error
 - Depth error



CSEP V1.0 - Generate/Scale Forecast

- Generate forecast
 - 1-day STEP model
 - 1-day ETES model (work in progress)
- Scale forecast
 - RELM 5-year Mainshock file-based models
 - 13 models



CSEP V1.0 - Combine Forecast with Observations

- Combine forecast with observations
 - Used to compute the “true” test result
- Combine forecast with test catalogs
 - Used to compute results of “modifications”

CSEP V1.0 - Run Evaluation Test

- RELM N (number) test
 - One test per each forecast model
- RELM L (likelihood) test
 - One test per each forecast model
- RELM R (likelihood ratio) test
 - Requires two forecast models
 - Total of 78 tests for 13 models

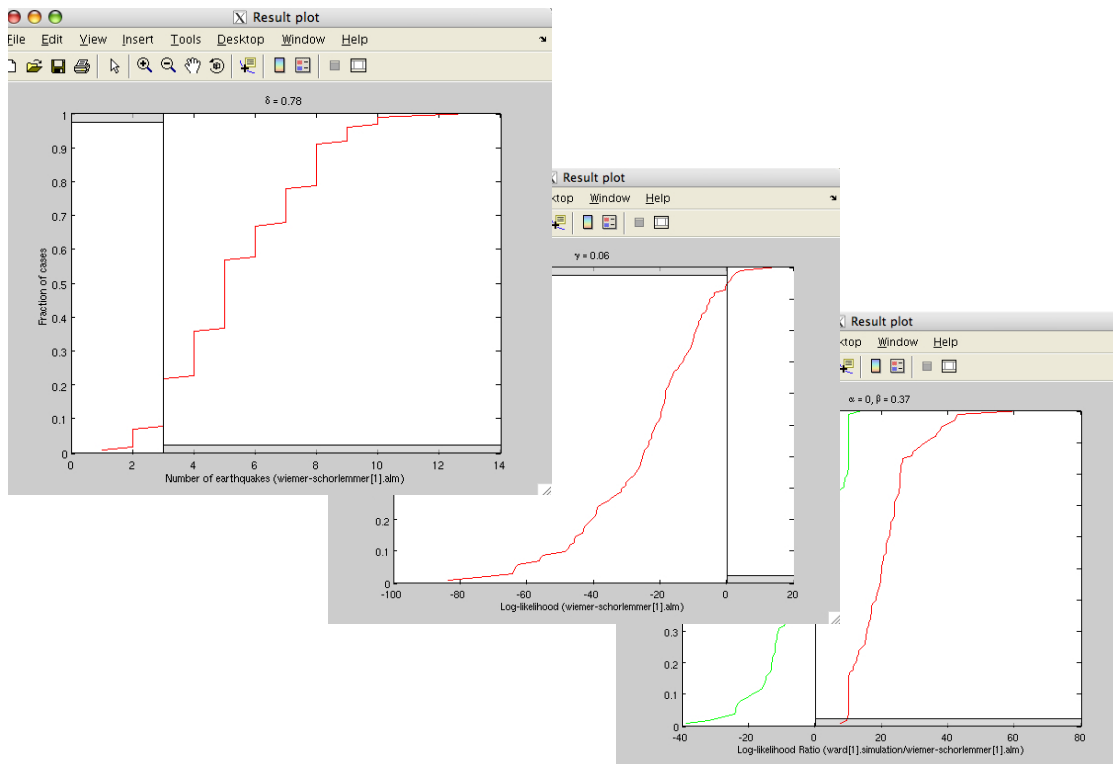
CSEP V1.0 - Generate Results

- Result XML format

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CSEP V1.0 - Display Results

- Generate plots





CSEP V1.0

- To be validated and distributed to other than SCEC testing centers