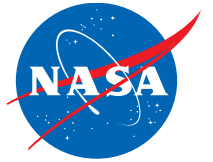


T0TEM – T0 Test Evaluation Module

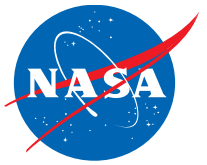
ASTM Committee Week 11/5/2018

ASTM E08.07.06 – E1921

Levi Shelton

Cameron Bosley

Topics



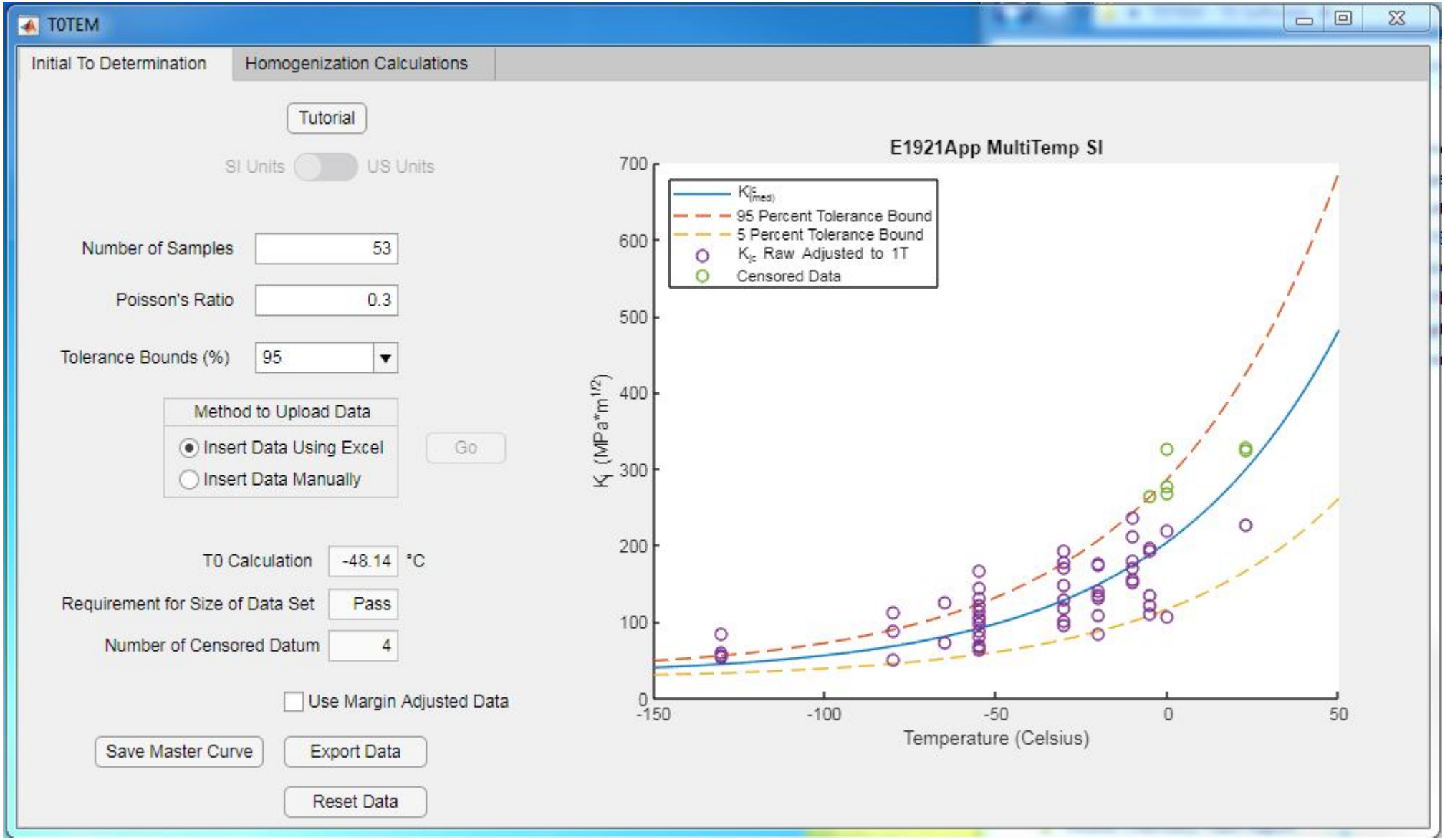
- Status
- Software Overview
- Testing Results
- Planned Additions
- Working Group Distribution

Status

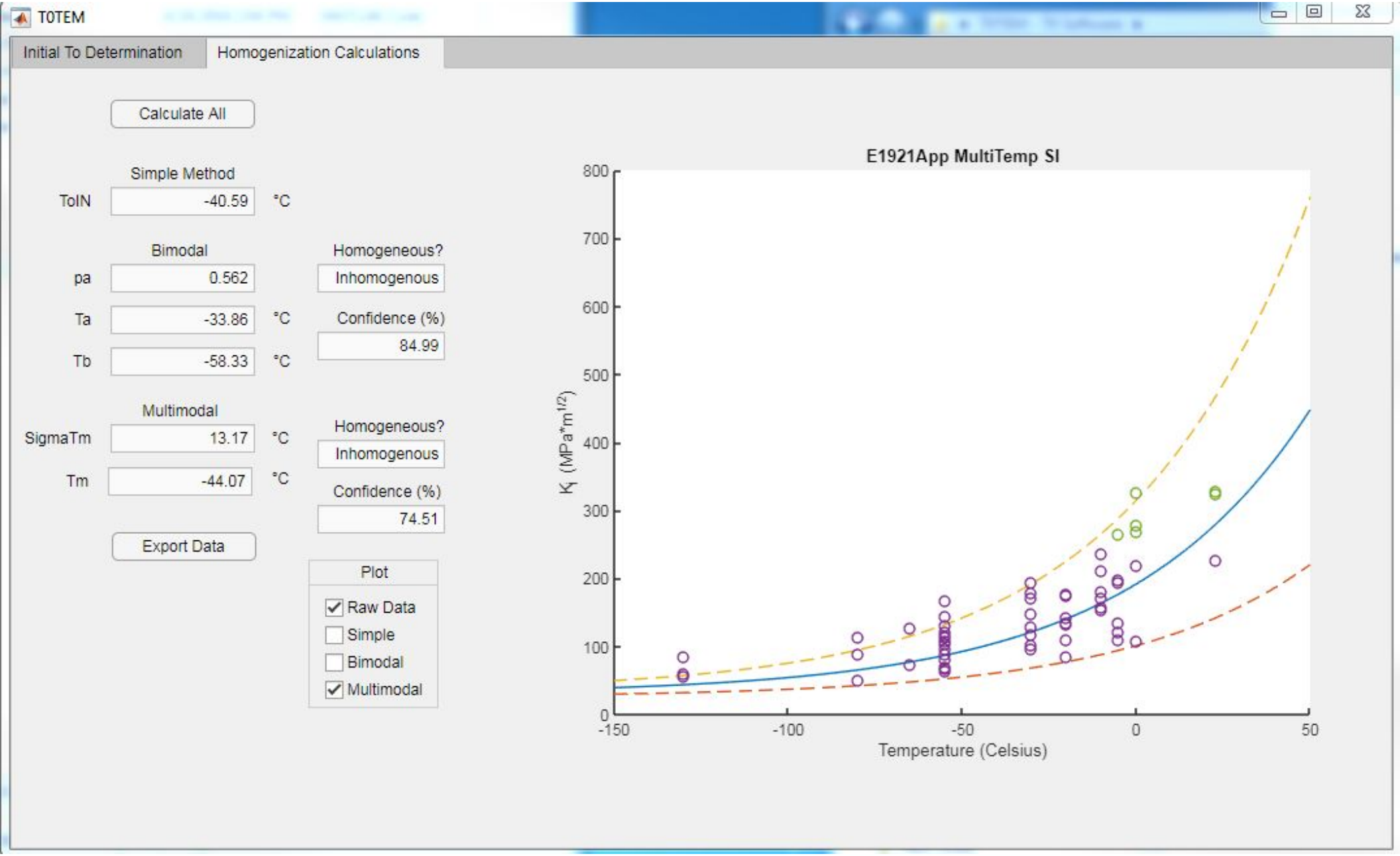
- Basic functionality complete:
  - Standard T0 calculation (multi-temp and single temp methods)
  - Master Curve plotting and selectable confidence bounds
  - Bi-modal and multi-modal calculations and plots
  - US and SI unit selectable
  - Manual entry/file select input
  - Margin adjustment

- Work still being done on:
  - Output Files (graphs, CSV)
  - Input File formatting (CSV)

Software Overview



Software Overview



Testing Results

- For E1921 example problem:
  - Time to calculate standard T0 <5s
  - Time to calculate inhomogeneity results ~15s

- Largest data set attempted: 80 specimens
  - Time to calculate standard T0 <10s
  - Time to calculate inhomogeneity results ~30s

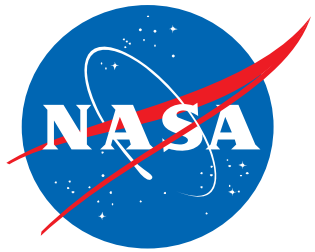
- Accuracy compared to original T0 script used to help validate inhomogeneity annex
- Accuracy within 1% to validated values listed in annex

Planned Additions

- Allow for active adjustment of plot area
- Simple upper shelf plotting ability
- Add list of where specimens fall into validity requirements (to help adjust temperature while testing still being conducted)
- Tutorial auto runs ASTM sample set
- Visual output of Kjc▲a and Kjc limit values
- Compressing code into functions for ease of troubleshooting and operation speed

Working Group Distribution

- Currently going through NASA channels regarding limited distribution to working group test members.
- Need list of people interested in testing out beta version.
- In short term if anyone has non-sensitive data they are willing to share or would like analyzed we can send the input format file and return results for comparison.


NASA