# 1. Time of failure

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Chart

Description automatically generatedChart, line chart

Description automatically generatedChart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 1 [ top delc = 0.1, bottom delc = 0.01]

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart

Description automatically generated with medium confidence

Left to right dd2 (0.1, 0.5, 0.9) all a = 10 [ top delc = 0.1, bottom delc = 0.01]

Chart, line chart

Description automatically generatedChart

Description automatically generatedChart

Description automatically generated

Chart, line chart

Description automatically generatedChart

Description automatically generated with medium confidenceChart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 100 [ top delc = 0.1, bottom delc = 0.01] (a. no conv dc-2)

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 1000 [ top delc = 0.1, bottom delc = 0.01], dc-2 bad 4,llc-4

* a = 1000 not good to coarsen, very late convergence (resF = 3)
* other a’s even 100 decent convergence on or after (resF == 1) – resF = 1 underestimates tF
* sso = 1 better: for coarsest mesh sso = 0 results in more brittle (earlier fracture)

# 2. Dissipated energy

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart

Description automatically generated

Chart

Description automatically generatedChart, scatter chart

Description automatically generatedChart, line chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 1 [ top delc = 0.1, bottom delc = 0.01] – solid mrk does well!

Graphical user interface

Description automatically generated with low confidenceGraphical user interface, application

Description automatically generatedChart, line chart

Description automatically generated

Graphical user interface

Description automatically generated with medium confidenceChart

Description automatically generatedA picture containing chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 10 [ top delc = 0.1, bottom delc = 0.01] again sld mrk well!

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart

Description automatically generated

Graphical user interface

Description automatically generated with medium confidenceChart

Description automatically generatedChart, line chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 100 [ top delc = 0.1, bottom delc = 0.01]

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Chart, diagram, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 1000 [ top delc = 0.1, bottom delc = 0.01]

* sso = 1 better
* a = 1000 worse (?)
* Worse for lc = 0.1 and 0.01 and bit for lc = 0.001
* Almost perfect for lc = 1e-4

# 3. Sigma max

A picture containing chart

Description automatically generatedTimeline

Description automatically generated with medium confidenceTimeline

Description automatically generated

A picture containing chart

Description automatically generatedA picture containing chart

Description automatically generatedChart

Description automatically generated with medium confidence

Left to right dd2 (0.1, 0.5, 0.9) all a = 1 [ top delc = 0.1, bottom delc = 0.01]

Chart

Description automatically generated with medium confidenceGraphical user interface, application

Description automatically generatedA picture containing chart

Description automatically generated

Chart

Description automatically generated with medium confidenceGraphical user interface, application

Description automatically generatedGraphical user interface, chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 10 [ top delc = 0.1, bottom delc = 0.01]

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Chart

Description automatically generatedChart

Description automatically generatedChart, line chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 100 [ top delc = 0.1, bottom delc = 0.01]

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Left to right dd2 (0.1, 0.5, 0.9) all a = 1000 [ top delc = 0.1, bottom delc = 0.01]

* sso = 1 better, almost perfect for a = 1, 10, even 100 (except dd2 = 0.9), otherwise it understimates.
* sso = 0 (point val) bad as it overestimates
* a = 1000 bad overall and cannot coarsen