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| JPL EXPORT ADMINISTRATION DOCUMENT REVIEW RECORD |
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Log #: 27230-27343

(Note: This form and process do not replace the procedures described in JPL Policy relating to review and approval of proposals and contractual documents. This process is intended to document the review and coordination of requests to ascertain the export control ramifications relating to specific documents. Export Administration signature does not convey authority to export or release the "Exporter of Record" from any export laws or regulations.)

Program: ISSM: Ice Sheet System Model

Person Requesting or Initiating Export: Dr. Eric Larour

Date Received: 27-Oct-PM

Document Title/Description: ISSM changes from revision 27230 to revision 27343

Release to: <http://issm.ess.uci.edu/svn/issm/issm/trunk> on ISSM svn repository

JPL Intranet: murdo.jpl.nasa.gov/proj/ice/larour/issm-uci/trunk-jpl

Disposition: 6 Does not contain export-controlled information. May be released/disclosed as requested subject to Company guidelines on protection of proprietary information (if applicable).

Comments: see table of changes below.

Reviewed by ISSM Export Transfer Liaison: Dr. Eric Larour **Date:** 27-Oct-PM

Disposition:

- 1: Public Domain Information (Ref ITAR Section 120.11)
 - 2: Qualifies for ITAR Exemption
 - 3: Covered by Department of State License/Agreement Number
 - 4: Covered by Department of Commerce validated license or exception
 - 5: New License Required
 - 6: Does not contain export-controlled information. May be released/disclosed as requested subject to Company guidelines on protection of proprietary information (if applicable).
 - 7: Other (specify)
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Change #1 with diff file ISSM-27231-27232.diff:

Function name:

M /issm/trunk-jpl

Export determination: 6.

Rationale: merged trunk and trunk-jpl

Change #2 with diff file ISSM-27233-27234.diff:

Function name:

M /issm/trunk-jpl M /issm/trunk-jpl/src M /issm/trunk-jpl/test

Export determination: 6.

Rationale: Block revision 27232 from being merged into trunk-jpl

Change #3 with diff file ISSM-27234-27235.diff:

Function name:

M /issm/trunk-jpl/configure.ac

Export determination: 6.

Rationale: CHG: new issm version

Change #4 with diff file ISSM-27236-27237.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/SMBgemb.m M /issm/trunk-jpl/src/m/classes/SMBgemb.py

Export determination: 6.

Rationale: CHG: new GEMB class for manuscript

Change #5 with diff file ISSM-27237-27238.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/Gembx.cpp M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.h

Export determination: 6.

Rationale: CHG: some GEMB cleanup

Change #6 with diff file ISSM-27238-27239.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/Gembx.cpp

Export determination: 6.

Rationale: CHG: tighten GEMB constraints on ice depth

Change #7 with diff file ISSM-27240-27241.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/Gembx.cpp M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.h M /issm/trunk-jpl/test/Archives/Archive243.arch M /issm/trunk-jpl/test/Archives/Archive244.arch M /issm/trunk-jpl/test/Archives/Archive252.arch

Export determination: 6.

Rationale: CHG: more GEMB cleanup of ints to floats

Change #8 with diff file ISSM-27241-27242.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/Gembx.cpp

Export determination: 6.

Rationale: CHG: incorporate some tolerances into GEMB initial layering

Change #9 with diff file ISSM-27242-27243.diff:

Function name:

M /issm/trunk-jpl/test/NightlyRun/test243.m M /issm/trunk-jpl/test/NightlyRun/test243.py

M /issm/trunk-jpl/test/NightlyRun/test244.m M /issm/trunk-jpl/test/NightlyRun/test244.py
M /issm/trunk-jpl/test/NightlyRun/test252.m M /issm/trunk-jpl/test/NightlyRun/test252.py
Export determination: 6.
Rationale: CHG: loosen tols for GEMB runs

Change #10 with diff file ISSM-27243-27244.diff:

Function name:

M /issm/trunk-jpl/test/NightlyRun/test243.m M /issm/trunk-jpl/test/NightlyRun/test243.py
Export determination: 6.
Rationale: CHG: update tols for GEMB windows

Change #11 with diff file ISSM-27246-27247.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.c
M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/modules/FloatingIceMeltingRate
M /issm/trunk-jpl/src/c/modules/FloatingIceMeltingRate/FloatingIceMeltingRate.h
M /issm/trunk-jpl/src/c/modules/FrontalForcings/FrontalForcings.cpp M /issm/trunk-
jpl/src/c/modules/FrontalForcings/FrontalForcings.h M /issm/trunk-jpl/src/c/modules/ModelProcessor/C
M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.cpp
M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.h
M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumJl.v
M /issm/trunk-jpl/src/c/shared/Enum/StringToEnum.cpp M /issm/trunk-jpl/src/m/classes/SMBautoregres
M /issm/trunk-jpl/src/m/classes/SMBautoregression.py M /issm/trunk-jpl/src/m/classes/autoregressionlinea
M /issm/trunk-jpl/src/m/classes/autoregressionlinearbasalforcings.py M /issm/trunk-
jpl/src/m/classes/frontalforcingsrignotautoregression.m M /issm/trunk-jpl/src/m/classes/frontalforcingsrignot
M /issm/trunk-jpl/test/Archives/Archive257.arch M /issm/trunk-jpl/test/Archives/Archive543.arch
M /issm/trunk-jpl/test/Archives/Archive544.arch M /issm/trunk-jpl/test/NightlyRun/test257.m
M /issm/trunk-jpl/test/NightlyRun/test257.py M /issm/trunk-jpl/test/NightlyRun/test543.m
M /issm/trunk-jpl/test/NightlyRun/test543.py M /issm/trunk-jpl/test/NightlyRun/test544.m
M /issm/trunk-jpl/test/NightlyRun/test544.py
Export determination: 6.
Rationale: CHG: clean-up of autoregression method

Change #12 with diff file ISSM-27247-27248.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotautoregression.m
Export determination: 6.

Rationale: BUG: fixing typo

Change #13 with diff file ISSM-27250-27251.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/MasstransportAnal
M /issm/trunk-jpl/src/c/analyses/SmbAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp
M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/modules/FloatingiceMeltingRa
M /issm/trunk-jpl/src/c/modules/FloatingiceMeltingRatex/FloatingiceMeltingRatex.h
M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/FrontalForcingsx.cpp M /issm/trunk-
jpl/src/c/modules/FrontalForcingsx/FrontalForcingsx.h M /issm/trunk-jpl/src/c/modules/ModelProcessorx/C
M /issm/trunk-jpl/src/c/modules/StochasticForcingx/StochasticForcingx.cpp M
/issm/trunk-jpl/src/c/modules/SurfaceMassBalancex/SurfaceMassBalancex.cpp
M /issm/trunk-jpl/src/c/modules/SurfaceMassBalancex/SurfaceMassBalancex.h
M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
M /issm/trunk-jpl/src/c/shared/Enum/EnumToStringx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.v
M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp M /issm/trunk-jpl/src/c/shared/io/Marshalling/I
A /issm/trunk-jpl/src/m/classes/SMBarma.m A /issm/trunk-jpl/src/m/classes/SMBarma.py
A /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.m A /issm/trunk-
jpl/src/m/classes/frontalforcingsrignotarma.py A /issm/trunk-jpl/src/m/classes/linearbasalforcingsarma.m
A /issm/trunk-jpl/src/m/classes/linearbasalforcingsarma.py M /issm/trunk-jpl/test/NightlyRun/test257.m
M /issm/trunk-jpl/test/NightlyRun/test257.py M /issm/trunk-jpl/test/NightlyRun/test543.m
M /issm/trunk-jpl/test/NightlyRun/test543.py M /issm/trunk-jpl/test/NightlyRun/test544.m
M /issm/trunk-jpl/test/NightlyRun/test544.py

Export determination: 6.

Rationale: CHG Changing autoregression schemes towards ARMA schemes:
work is ongoing

Change #14 with diff file ISSM-27251-27252.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/stochasticforcing.m M /issm/trunk-jpl/src/m/classes/stochasticforcing.py

Export determination: 6.

Rationale: CHG Changing autoregression schemes towards ARMA schemes:
work is ongoing (forgot two files)

Change #15 with diff file ISSM-27252-27253.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp
M /issm/trunk-jpl/src/c/cores/movingfront_core.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions

M /issm/trunk-jpl/src/m/classes/calvingparameterization.m
Export determination: 6.
Rationale: CHG: use max Vel to normalize the parameterization of the frontal
ablation rate

Change #16 with diff file ISSM-27253-27254.diff:

Function name:
M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp M /issm/trunk-jpl/src/c/cores/movingfront_core.cpp
M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
Export determination: 6.
Rationale: CHG: separate velmax and velthreshold for calving parameterization

Change #17 with diff file ISSM-27254-27255.diff:

Function name:
M /issm/trunk-jpl/src/c/cores/movingfront_core.cpp
Export determination: 6.
Rationale: BUG: only calculate maxvel in movingfront when stressbalance is
solved

Change #18 with diff file ISSM-27256-27257.diff:

Function name:
A /issm/trunk-jpl/src/m/classes/clusters/pace.m
Export determination: 6.
Rationale: NEW adding a cluster script for PACE

Change #19 with diff file ISSM-27260-27261.diff:

Function name:
M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.h
M /issm/trunk-jpl/src/c/modules/FloatingIceMeltingRate/FloatingIceMeltingRate.cpp
M /issm/trunk-jpl/src/c/modules/FrontalForcings/FrontalForcings.cpp M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumJl.v
M /issm/trunk-jpl/src/c/shared/Enum/StringToEnum.cpp M /issm/trunk-jpl/src/m/classes/SMBarma.m
M /issm/trunk-jpl/src/m/classes/SMBarma.py M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.m

M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.py M /issm/trunk-jpl/src/m/classes/linearbasalforcingsarma.m M /issm/trunk-jpl/test/Archives/Archive257.arch M /issm/trunk-jpl/test/Archives/Archive543.arch M /issm/trunk-jpl/test/Archives/Archive544.arch M /issm/trunk-jpl/test/NightlyRun/test257.m M /issm/trunk-jpl/test/NightlyRun/test257.py M /issm/trunk-jpl/test/NightlyRun/test543.m M /issm/trunk-jpl/test/NightlyRun/test543.py M /issm/trunk-jpl/test/NightlyRun/test544.m M /issm/trunk-jpl/test/NightlyRun/test544.py
 Export determination: 6.
 Rationale: NEW arma process fully implemented

Change #20 with diff file ISSM-27261-27262.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/F M /issm/trunk-jpl/src/m/classes/linearbasalforcingsarma.py M /issm/trunk-jpl/test/Archives/Archive543.arch M /issm/trunk-jpl/test/NightlyRun/test543.m M /issm/trunk-jpl/test/NightlyRun/test543.py M /issm/trunk-jpl/test/NightlyRun/test544.py
 Export determination: 6.
 Rationale: BUG fixing bugs in arma scripts

Change #21 with diff file ISSM-27262-27263.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/clusters/acenet.m M /issm/trunk-jpl/src/m/classes/clusters/aci.m M /issm/trunk-jpl/src/m/classes/clusters/aurora.m A /issm/trunk-jpl/src/m/classes/clusters/aws_issm_solutions.m M /issm/trunk-jpl/src/m/classes/clusters/camhpc.m M /issm/trunk-jpl/src/m/classes/clusters/castor.m M /issm/trunk-jpl/src/m/classes/clusters/cloud.m M /issm/trunk-jpl/src/m/classes/clusters/cloud.py M /issm/trunk-jpl/src/m/classes/clusters/computecanada.m M /issm/trunk-jpl/src/m/classes/clusters/cosmos.m M /issm/trunk-jpl/src/m/classes/clusters/cyclone.py M /issm/trunk-jpl/src/m/classes/clusters/discover.m M /issm/trunk-jpl/src/m/classes/clusters/discover.py M /issm/trunk-jpl/src/m/classes/clusters/discovery.m M /issm/trunk-jpl/src/m/classes/clusters/fram.py M /issm/trunk-jpl/src/m/classes/clusters/frontera.m M /issm/trunk-jpl/src/m/classes/clusters/gemini.m M /issm/trunk-jpl/src/m/classes/clusters/generic.m M /issm/trunk-jpl/src/m/classes/clusters/generic.py M /issm/trunk-jpl/src/m/classes/clusters/generic_static.m M /issm/trunk-jpl/src/m/classes/clusters/generic_static.py M /issm/trunk-jpl/src/m/classes/clusters/greenplanet.m M /issm/trunk-jpl/src/m/classes/clusters/hpc.m M /issm/trunk-jpl/src/m/classes/clusters/hpc_simba.m M /issm/trunk-jpl/src/m/classes/clusters/localpfe.m M /issm/trunk-jpl/src/m/classes/clusters/lonestar.m M /issm/trunk-jpl/src/m/classes/clusters/maui.m M /issm/trunk-jpl/src/m/classes/clusters/pace.m M /issm/trunk-jpl/src/m/classes/clusters/pfe.m M /issm/trunk-jpl/src/m/classes/clusters/pfe.py M /issm/trunk-jpl/src/m/classes/clusters/raijin.m M /issm/trunk-jpl/src/m/classes/clusters/saga.py M /issm/trunk-jpl/src/m/classes/clusters/sherlock.m M /issm/trunk-jpl/src/m/classes/clusters/smce_eis.py M /issm/trunk-jpl/src/m/classes/clusters/tetralith.m M /issm/trunk-jpl/src/m/classes/clusters/yellowstone.m M /issm/trunk-jpl/src/m/solve/waitonlock.m M /issm/trunk-jpl/src/m/solve/waitonlock.py M /issm/trunk-jpl/test/NightlyRun/runme.m

A /issm/trunk-jpl/test/NightlyRun/test101awsissmsolutionserver.m
Export determination: 6.
Rationale: CHG: Custom cluster class for AWS ISSM solution server instance;
typos; clean up

Change #22 with diff file ISSM-27263-27264.diff:

Function name:
M /issm/trunk-jpl/src/m/solve/waitonlock.py
Export determination: 6.
Rationale: BUG: Syntax

Change #23 with diff file ISSM-27264-27265.diff:

Function name:
M /issm/trunk-jpl/src/m/contrib/defleurian/netCDF/export_netCDF.m M /issm/trunk-jpl/src/m/contrib/defleurian/netCDF/export_netCDF.py M /issm/trunk-jpl/src/m/io/loadvars.py
Export determination: 6.
Rationale: CHG:Some netCDF IO modifications

Change #24 with diff file ISSM-27271-27272.diff:

Function name:
M /issm/trunk-jpl/src/c/classes/Elements/Penta.cpp M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp
Export determination: 6.
Rationale: CHG: use CalvingFromRate to determine the direction of calving so
that Levermann is consistent with other calving laws

Change #25 with diff file ISSM-27272-27273.diff:

Function name:
M /issm/trunk-jpl/test/Archives/Archive806.arch M /issm/trunk-jpl/test/Archives/Archive812.arch
Export determination: 6.
Rationale: CHG: updating archives based on new Levermann direction

Change #26 with diff file ISSM-27274-27275.diff:

Function name:

M /issm/trunk-jpl/test/Archives/Archive3203.arch
Export determination: 6.
Rationale: CHG: new archive now that levermann is fixed

Change #27 with diff file ISSM-27276-27277.diff:

Function name:

M /issm/trunk-jpl/src/c/shared/Random/random.cpp D /issm/trunk-jpl/src/m/classes/SMBautoregression.m
D /issm/trunk-jpl/src/m/classes/SMBautoregression.py D /issm/trunk-jpl/src/m/classes/autoregressionlinear
D /issm/trunk-jpl/src/m/classes/autoregressionlinearbasalforcings.py D /issm/trunk-
jpl/src/m/classes/frontalforcingsrignotautoregression.m D /issm/trunk-jpl/src/m/classes/frontalforcingsrignot
M /issm/trunk-jpl/src/m/contrib/morlighem/modeldata/interpBedmachineGreenland.m
M /issm/trunk-jpl/src/m/contrib/morlighem/modeldata/interpSeaRISE.m

Export determination: 6.

Rationale: CHG: deleting old autoregression scripts

Change #28 with diff file ISSM-27277-27278.diff:

Function name:

M /issm/trunk-jpl/src/m/contrib/morlighem/modeldata/interpBedmachineGreenland.m
M /issm/trunk-jpl/src/m/contrib/morlighem/modeldata/interpSeaRISE.m

Export determination: 6.

Rationale: BUG reverting files that should not have been modified

Change #29 with diff file ISSM-27278-27279.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/FreeSurfaceBaseAnalysis.cpp M /issm/trunk-
jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/MasstransportAnalysis.cpp
M /issm/trunk-jpl/src/c/analyses/StressbalanceAnalysis.cpp M /issm/trunk-
jpl/src/c/analyses/StressbalanceVerticalAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp
M /issm/trunk-jpl/src/c/modules/ModelProcessorx/CreateParameters.cpp M
/issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
M /issm/trunk-jpl/src/c/shared/Enum/EnumToStringx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.v
M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp M /issm/trunk-jpl/src/m/classes/basalforcingsbe

Export determination: 6.

Rationale: NEW: added possibility to use thermal forcing in basalforcingsbeck-
manngoose and ensures compatibility with thermal forcing of frontalforcingsrig-
not

Change #30 with diff file ISSM-27279-27280.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/FreeSurfaceBaseAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/MasstransportAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/StressbalanceAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/StressbalanceVerticalAnalysis.cpp

Export determination: 6.

Rationale: CHG: compatibility of basalforcingsbeckmanngoosse with frontal-forcingsrignotarma

Change #31 with diff file ISSM-27280-27281.diff:

Function name:

M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp M /issm/trunk-jpl/src/m/classes/calvingparameterization

Export determination: 6.

Rationale: CHG: add linear relationship in calving parameterization using normalized vel

Change #32 with diff file ISSM-27281-27282.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/frontalforcingsrignot.m

Export determination: 6.

Rationale: CHG: correct the unit for subglacial_discharge

Change #33 with diff file ISSM-27282-27283.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/HydrologyGlaDSAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp M /issm/trunk-jpl/src/c/classes/Loads/Channel.cpp M /issm/trunk-jpl/src/c/modules/SetActiveNodesLSMx/SetActiveNodesLSMx.cpp M /issm/trunk-jpl/src/c/modules/SetActiveNodesLSMx/SetActiveNodesLSMx.h M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h M /issm/trunk-jpl/src/c/shared/Enum/EnumToStringx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.v M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp

Export determination: 6.

Rationale: CHG: preparing ground for GlaDS bigger domain

Change #34 with diff file ISSM-27283-27284.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/SetActiveNodesLSMx/SetActiveNodesLSMx.cpp

Export determination: 6.

Rationale: BUG: inverted hydro and non hydro run!

Change #35 with diff file ISSM-27284-27285.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/FreeSurfaceBaseAnalysis.cpp M /issm/trunk-

jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/MasstransportAnalysis.cpp

M /issm/trunk-jpl/src/c/analyses/StressbalanceAnalysis.cpp M /issm/trunk-

jpl/src/c/analyses/StressbalanceVerticalAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp

M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h

M /issm/trunk-jpl/src/c/shared/Enum/EnumToStringx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.v

M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp

Export determination: 6.

Rationale: CHG: changed Enum name from FrontalForcingsAndBasalforcings-

ThermalForcingEnum to ThermalForcingEnum

Change #36 with diff file ISSM-27285-27286.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cp

M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/Fro

M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h

M /issm/trunk-jpl/src/c/shared/Enum/EnumToStringx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.v

M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp M /issm/trunk-jpl/src/m/classes/frontalforcingsr

M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.py

Export determination: 6.

Rationale: NEW: added monthly effect capabilities to frontalforcingsrignotarma

Change #37 with diff file ISSM-27286-27287.diff:

Function name:

A /issm/trunk-jpl/src/m/classes/calvingpollard.m

Export determination: 6.

Rationale: CHG: added matlab class for Pollard and DeConto calving parame-
terization

Change #38 with diff file ISSM-27287-27288.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp
M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/classes/Elements/Penta.cpp
M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp M /issm/trunk-jpl/src/c/classes/Elements/Tria.h
M /issm/trunk-jpl/src/c/modules/Calvingx/Calvingx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim
M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h M /issm/trunk-jpl/src/c/shared/Enum/EnumToSt
M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.vim M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.c
M /issm/trunk-jpl/src/c/shared/io/Marshalling/IoCodeConversions.cpp

Export determination: 6.

Rationale: NEW: Implemented Pollard and DeContol magical calving law

Change #39 with diff file ISSM-27288-27289.diff:

Function name:

M /issm/trunk-jpl/src/c/cores/movingfront_core.cpp

Export determination: 6.

Rationale: CHG: simplifying how variables are extrapolated

Change #40 with diff file ISSM-27289-27290.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/HydrologyGlaDSAnalysis.cpp

Export determination: 6.

Rationale: partially floating and part no ice elements have zero sheet thickness
and zero N

Change #41 with diff file ISSM-27290-27291.diff:

Function name:

A /issm/trunk-jpl/src/m/classes/clusters/hpc_simba2.m

Export determination: 6.

Rationale: NEW: cluster for SIMBA at KOPRI.

Change #42 with diff file ISSM-27291-27292.diff:

Function name:

M /issm/trunk-jpl/src/m/plot/plotmodel.m

Export determination: 6.

Rationale: CHG: fix minor - specify figure position for inwoo.

Change #43 with diff file ISSM-27292-27293.diff:

Function name:

M /issm/trunk-jpl/src/m/plot/plotmodel.m

Export determination: 6.

Rationale: BUG: fixing Inwoo's commit

Change #44 with diff file ISSM-27293-27294.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/HydrologyGlaDSAnalysis.cpp

Export determination: 6.

Rationale: NEW: added hydro speed as output

Change #45 with diff file ISSM-27294-27295.diff:

Function name:

M /issm/trunk-jpl/src/c/classes/Elements/Penta.cpp M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp

Export determination: 6.

Rationale: CHG: added CFL for hydro models

Change #46 with diff file ISSM-27295-27296.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/HydrologyGlaDSAnalysis.cpp

Export determination: 6.

Rationale: CHG: time stepping may be looking for vx/vy

Change #47 with diff file ISSM-27296-27297.diff:

Function name:

M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp

Export determination: 6.

Rationale: CHG: time stepping may be looking for vxhydro/vyhydro

Change #48 with diff file ISSM-27297-27298.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/SmbAnalysis.cpp M /issm/trunk-jpl/src/c/modules/ModelProcessorx/CreateParameters.cpp
M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.cpp
M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.h
M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp
M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp M /issm/trunk-jpl/src/c/shared/io/Marshalling/IO.cpp
A /issm/trunk-jpl/src/m/classes/SMBdebrisML.m M /issm/trunk-jpl/src/m/classes/initialization.m

Export determination: 6.

Rationale: NEW: SMB debris model based on Mayer & Licuilli 2021

Change #49 with diff file ISSM-27298-27299.diff:

Function name:

M /issm/trunk-jpl/src/c/Makefile.am A /issm/trunk-jpl/src/c/analyses/DebrisAnalysis.cpp
M /issm/trunk-jpl/src/c/analyses/analyses.h M /issm/trunk-jpl/src/c/classes/FemModel.cpp
M /issm/trunk-jpl/src/c/classes/Node.cpp M /issm/trunk-jpl/src/c/classes/Profiler.h
M /issm/trunk-jpl/src/c/cores/cores.h A /issm/trunk-jpl/src/c/cores/debris_core.cpp
M /issm/trunk-jpl/src/c/cores/transient_core.cpp M /issm/trunk-jpl/src/c/modules/ModelProcessorx/CreateParameters.cpp
M /issm/trunk-jpl/src/c/modules/ModelProcessorx/CreateParameters.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp
A /issm/trunk-jpl/src/m/classes/debris.m

Export determination: 6.

Rationale: NEW: Debris Analysis

Change #50 with diff file ISSM-27299-27300.diff:

Function name:

M /issm/trunk-jpl/m4/analyses.m4 M /issm/trunk-jpl/src/c/analyses/EnumToAnalysis.cpp
M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h
M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.vim

Export determination: 6.

Rationale: BUG: forgot to update Analysis/m4 for Debris

Change #51 with diff file ISSM-27300-27301.diff:

Function name:

A /issm/trunk-jpl/src/c/analyses/DebrisAnalysis.h

Export determination: 6.

Rationale: CHG: added DebrisAnalysis.h

Change #52 with diff file ISSM-27301-27302.diff:
Function name:
M /issm/trunk-jpl/src/c/analyses/DebrisAnalysis.cpp
Export determination: 6.
Rationale: BUG: declarations in switch must be within

Change #53 with diff file ISSM-27302-27303.diff:
Function name:
M /issm/trunk-jpl/src/c/analyses/DebrisAnalysis.cpp
Export determination: 6.
Rationale: CHG: minor AD

Change #54 with diff file ISSM-27303-27304.diff:
Function name:
M /issm/trunk-jpl/src/m/classes/transient.m
Export determination: 6.
Rationale: CHG: Fixing errors with isdebris in transient simulations

Change #55 with diff file ISSM-27304-27305.diff:
Function name:
M /issm/trunk-jpl/src/c/analyses/DebrisAnalysis.cpp
Export determination: 6.
Rationale: BUG: fixing AD

Change #56 with diff file ISSM-27305-27306.diff:
Function name:
M /issm/trunk-jpl/src/m/classes/transient.js M /issm/trunk-jpl/src/m/classes/transient.py
Export determination: 6.
Rationale: CHG: fixing python

Change #57 with diff file ISSM-27306-27307.diff:
Function name:
M /issm/trunk-jpl/src/c/classes/FemModel.cpp

Export determination: 6.
Rationale: CHG: estetics

Change #58 with diff file ISSM-27307-27308.diff:

Function name:

M /issm/trunk-jpl/externalpackages/petsc/install-3.16-linux.sh M /issm/trunk-jpl/externalpackages/petsc/install-3.16-mac.sh M /issm/trunk-jpl/externalpackages/petsc/install-3.17-mac-m1-static.sh M /issm/trunk-jpl/externalpackages/petsc/install-3.17-mac-m1.sh

Export determination: 6.

Rationale: BUG: do not call config/configure.py but configure to avoid python error messages

Change #59 with diff file ISSM-27308-27309.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/HydrologyTwsAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/LoveAnalysis.cpp M /issm/trunk-jpl/src/c/analyses/SealevelchangeAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/classes/Elements/Penta.h M /issm/trunk-jpl/src/c/classes/Elements/Seg.h M /issm/trunk-jpl/src/c/classes/Elements/Tetra.h M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp M /issm/trunk-jpl/src/c/classes/Elements/Tria.h M /issm/trunk-jpl/src/c/classes/FemModel.cpp M /issm/trunk-jpl/src/c/classes/GrdLoads.cpp M /issm/trunk-jpl/src/c/classes/GrdLoads.h M /issm/trunk-jpl/src/c/classes/Inputs/ArrayInput.cpp M /issm/trunk-jpl/src/c/classes/Inputs/IntArrayInput.cpp M /issm/trunk-jpl/src/c/cores/love_core.cpp M /issm/trunk-jpl/src/c/cores/sealevelchange_core.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinition.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp M /issm/trunk-jpl/src/c/shared/Enum/StringToEnum.cpp A /issm/trunk-jpl/src/m/classes/love.m M /issm/trunk-jpl/src/m/classes/model.m M /issm/trunk-jpl/src/m/classes/sealevelmodel.m M /issm/trunk-jpl/src/m/classes/solidearth.m M /issm/trunk-jpl/src/m/solve/solveslm.m M /issm/trunk-jpl/test/NightlyRun/test2013.m M /issm/trunk-jpl/test/NightlyRun/test2070.m M /issm/trunk-jpl/test/NightlyRun/test2071.m M /issm/trunk-jpl/test/NightlyRun/test2072.m A /issm/trunk-jpl/test/NightlyRun/test2073.m M /issm/trunk-jpl/test/NightlyRun/test2084.m

Export determination: 6.

Rationale: CHG: sea-level change core optimization (runtime and memory use).
NEW: love number core, added support for parallelization, quad precision and EBM rheology. CHG: class fourierlove renamed to just love

Change #60 with diff file ISSM-27309-27310.diff:

Function name:

M /issm/trunk-jpl/src/c/cores/love_core.cpp
Export determination: 6.
Rationale: BUG: complex number declaration compatibility with older gcc versions

Change #61 with diff file ISSM-27310-27311.diff:

Function name:

M /issm/trunk-jpl/test/Archives/Archive2002.arch M /issm/trunk-jpl/test/Archives/Archive2005.arch
M /issm/trunk-jpl/test/Archives/Archive2008.arch M /issm/trunk-jpl/test/Archives/Archive2090.arch
Export determination: 6.
Rationale: CHG: Updated archives

Change #62 with diff file ISSM-27311-27312.diff:

Function name:

M /issm/trunk-jpl/test/Archives/Archive2002.arch M /issm/trunk-jpl/test/Archives/Archive2005.arch
M /issm/trunk-jpl/test/Archives/Archive2008.arch M /issm/trunk-jpl/test/Archives/Archive2070.arch
M /issm/trunk-jpl/test/Archives/Archive2071.arch M /issm/trunk-jpl/test/Archives/Archive2072.arch
A /issm/trunk-jpl/test/Archives/Archive2073.arch M /issm/trunk-jpl/test/Archives/Archive2090.arch
Export determination: 6.
Rationale: CHG: Updated archives

Change #63 with diff file ISSM-27312-27313.diff:

Function name:

M /issm/trunk-jpl/test/NightlyRun/test2071.m M /issm/trunk-jpl/test/NightlyRun/test2072.m
Export determination: 6.
Rationale: CHG: Eased tolerances

Change #64 with diff file ISSM-27313-27314.diff:

Function name:

M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp
Export determination: 6.
Rationale: NEW: set calving rate to 0 where there is no ice

Change #65 with diff file ISSM-27314-27315.diff:

Function name:

M /issm/trunk-jpl/src/c/cores/transient_core.cpp

Export determination: 6.

Rationale: BUG: call UpdateVertexPosition AFTER grounding line migration

Change #66 with diff file ISSM-27315-27316.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/HydrologyGlaDSAnalysis.cpp

Export determination: 6.

Rationale: CHG: added more friction laws to GlaDS

Change #67 with diff file ISSM-27316-27317.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/timesteppingadaptive.m

Export determination: 6.

Rationale: CHG: turn cycle forcing off by default

Change #68 with diff file ISSM-27318-27319.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp

M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/modules/FloatingIceMeltingRate.cpp

M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/FrontalForcingsx.cpp M /issm/trunk-

jpl/src/c/modules/ModelProcessorx/CreateParameters.cpp M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance.cpp

M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h

M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumToJson.cpp

M /issm/trunk-jpl/src/c/shared/Enum/StringToEnum.cpp M /issm/trunk-jpl/src/m/classes/SMBarma.m

M /issm/trunk-jpl/src/m/classes/SMBarma.py M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.m

M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.py M /issm/trunk-

jpl/src/m/classes/linearbasalforcingsarma.m M /issm/trunk-jpl/src/m/classes/linearbasalforcingsarma.py

M /issm/trunk-jpl/test/Archives/Archive257.arch M /issm/trunk-jpl/test/Archives/Archive543.arch

M /issm/trunk-jpl/test/Archives/Archive544.arch M /issm/trunk-jpl/test/NightlyRun/test257.m

M /issm/trunk-jpl/test/NightlyRun/test257.py M /issm/trunk-jpl/test/NightlyRun/test543.m

M /issm/trunk-jpl/test/NightlyRun/test543.py M /issm/trunk-jpl/test/NightlyRun/test544.m

M /issm/trunk-jpl/test/NightlyRun/test544.py

Export determination: 6.

Rationale: NEW piecewise polynomials implemented in ARMA model schemes

Change #69 with diff file ISSM-27319-27320.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/FloatingiceMeltingRatex/FloatingiceMeltingRatex.cpp

M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/FrontalForcingsx.cpp M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.cpp

Export determination: 6.

Rationale: BUG: fixed the assert column number for the ARMApolyparms arrays

Change #70 with diff file ISSM-27320-27321.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/FloatingiceMeltingRatex/FloatingiceMeltingRatex.cpp

M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/FrontalForcingsx.cpp M /issm/trunk-jpl/src/c/modules/SurfaceMassBalance/SurfaceMassBalance.cpp

Export determination: 6.

Rationale: BUG: fixed the assert column number for the ARMA datebreaks arrays

Change #71 with diff file ISSM-27321-27322.diff:

Function name:

M /issm/trunk-jpl/test/Archives/Archive355.arch M /issm/trunk-jpl/test/Archives/Archive426.arch

M /issm/trunk-jpl/test/Archives/Archive427.arch M /issm/trunk-jpl/test/Archives/Archive435.arch

M /issm/trunk-jpl/test/Archives/Archive442.arch M /issm/trunk-jpl/test/Archives/Archive443.arch

M /issm/trunk-jpl/test/Archives/Archive473.arch M /issm/trunk-jpl/test/Archives/Archive474.arch

M /issm/trunk-jpl/test/Archives/Archive475.arch M /issm/trunk-jpl/test/Archives/Archive476.arch

M /issm/trunk-jpl/test/Archives/Archive802.arch M /issm/trunk-jpl/test/Archives/Archive803.arch

M /issm/trunk-jpl/test/Archives/Archive805.arch

Export determination: 6.

Rationale: CHG: updating archives for models that involve thermal models and GL as mesh velocity has changed slightly

Change #72 with diff file ISSM-27322-27323.diff:

Function name:

M /issm/trunk-jpl/test/Archives/Archive355.arch

Export determination: 6.

Rationale: CHG: undo changes to SHAKTI archive

Change #73 with diff file ISSM-27323-27324.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/SmbAnalysis.cpp M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.

M /issm/trunk-jpl/src/c/shared/Enum/EnumToString.cpp M /issm/trunk-jpl/src/c/shared/Enum/StringTo

M /issm/trunk-jpl/src/m/classes/SMBdebrisML.m M /issm/trunk-jpl/src/m/classes/debris.m

M /issm/trunk-jpl/src/m/classes/model.m

Export determination: 6.

Rationale: CHG: some minor fixes for debris stuff

Change #74 with diff file ISSM-27324-27325.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/debris.m

Export determination: 6.

Rationale: CHG: adjust checkfield for debris spcthickness

Change #75 with diff file ISSM-27325-27326.diff:

Function name:

M /issm/trunk-jpl/externalpackages/petsc/install-3.16-linux.sh M /issm/trunk-

jpl/externalpackages/petsc/install-3.16-pleiades.sh

Export determination: 6.

Rationale: CHG: PETSc version

Change #76 with diff file ISSM-27326-27327.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/solidearth.m M /issm/trunk-jpl/src/m/classes/solidearth.py

Export determination: 6.

Rationale: CHG: python translation

Change #77 with diff file ISSM-27327-27328.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/fourierlove.py M /issm/trunk-jpl/src/m/classes/love.m

A /issm/trunk-jpl/src/m/classes/love.py M /issm/trunk-jpl/src/m/classes/model.py

M /issm/trunk-jpl/src/m/classes/sealevelmodel.py M /issm/trunk-jpl/src/m/solve/solveslm.py

M /issm/trunk-jpl/test/NightlyRun/test2084.py

Export determination: 6.

Rationale: CHG: Python translations; cleanup

Change #78 with diff file ISSM-27328-27329.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/love.m

Export determination: 6.

Rationale: BUG: Bad copy/paste

Change #79 with diff file ISSM-27329-27330.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/model.py

Export determination: 6.

Rationale: BUG: Need to import love class

Change #80 with diff file ISSM-27330-27331.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/love.py

Export determination: 6.

Rationale: BUG: Type check

Change #81 with diff file ISSM-27331-27332.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/love.py

Export determination: 6.

Rationale: BUG: Missing attribute

Change #82 with diff file ISSM-27332-27333.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/love.py

Export determination: 6.

Rationale: BUG: Wrong mattype

Change #83 with diff file ISSM-27333-27334.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/love.py

Export determination: 6.

Rationale: BUG: Typo

Change #84 with diff file ISSM-27334-27335.diff:

Function name:

M /issm/trunk-jpl/src/c/analyses/LevelsetAnalysis.cpp M /issm/trunk-jpl/src/c/classes/Elements/Element.cp

M /issm/trunk-jpl/src/c/classes/Elements/Element.h M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/Fro

M /issm/trunk-jpl/src/c/shared/Enum/Enum.vim M /issm/trunk-jpl/src/c/shared/Enum/EnumDefinitions.h

M /issm/trunk-jpl/src/c/shared/Enum/EnumToStringx.cpp M /issm/trunk-jpl/src/c/shared/Enum/Enumjl.v

M /issm/trunk-jpl/src/c/shared/Enum/StringToEnumx.cpp M /issm/trunk-jpl/src/m/classes/frontalforcingsr

M /issm/trunk-jpl/src/m/classes/frontalforcingsrignotarma.py M /issm/trunk-

jpl/test/Archives/Archive543.arch M /issm/trunk-jpl/test/NightlyRun/test543.m

M /issm/trunk-jpl/test/NightlyRun/test543.py

Export determination: 6.

Rationale: NEW: added seasonal capabilities in frontalforcingsrignotarma

Change #85 with diff file ISSM-27335-27336.diff:

Function name:

M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/FrontalForcingsx.cpp

Export determination: 6.

Rationale: BUG: fixing assert error

Change #86 with diff file ISSM-27336-27337.diff:

Function name:

M /issm/trunk-jpl/etc/environment.sh A /issm/trunk-jpl/jenkins/eis-daskhub-

python-nodules A /issm/trunk-jpl/jenkins/eis-smce-binaries A /issm/trunk-jpl/src/m/classes/clusters/eis_nasa

D /issm/trunk-jpl/src/m/classes/clusters/smce_eis.py A /issm/trunk-jpl/test/NightlyRun/test101eisasasmce.

Export determination: 6.

Rationale: CHG: EIS-related commits

Change #87 with diff file ISSM-27337-27338.diff:

Function name:

M /issm/trunk-jpl/test/NightlyRun/runme.py
Export determination: 6.
Rationale: CHG: Run with Python 3; better pattern matching for testinteger₂.py

Change #88 with diff file ISSM-27338-27339.diff:
Function name:
M /issm/trunk-jpl/test/NightlyRun/runme.py
Export determination: 6.
Rationale: CHG: Run with Python 2 for now

Change #89 with diff file ISSM-27339-27340.diff:
Function name:
M /issm/trunk-jpl/src/c/classes/Elements/Tria.cpp
Export determination: 6.
Rationale: CHG: minor cosmetics

Change #90 with diff file ISSM-27340-27341.diff:
Function name:
M /issm/trunk-jpl/src/c/cores/controltao_core.cpp
Export determination: 6.
Rationale: CHG: updating TAO for new PETSc 3.18+ (untested)

Change #91 with diff file ISSM-27341-27342.diff:
Function name:
M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp
Export determination: 6.
Rationale: CHG: added error message so that anomalous values in melt rates are caught earlier

Change #92 with diff file ISSM-27342-27343.diff:
Function name:
M /issm/trunk-jpl/src/c/classes/Elements/Element.cpp M /issm/trunk-jpl/src/c/modules/FrontalForcingsx/F
Export determination: 6.

Rationale: BUG: fixing indexing in Armaprocess