

Thermoeconomic Analysis Toolbox

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TaesLab Classes

Base Classes

Name	Description
cTaesLab	Base class of the TaesLab toolbox.
cMessageBuilder	Create and print messages for cTaesLab objects.
cMessageLogger	Create and manage a message logger for cTaesLab objects.

Static Classes

Name	Description
cType	Static class to manage the constants of TaesLab.
cMessages	Static class which defines the TaesLab messages.
cParseStream	Static utility class to check and validate strings.

Read Data Model Classes

Name	Description
cReadModel	Abstract class to implement the model reader classes.
cReadModelStruct	Abstract class to read a structured data model.
cReadModelJSON	Implements the cReadModel to read JSON data model files.
cReadModelXML	Implements the cReadModel to read XML data model files.
cReadModelTable	Abstract class to read a table data model.
cReadModelCSV	Implements the cReadModel to read CSV data model files.
cReadModelXLS	Implements the cReadModel to read XLSX data model files.
cModelTable	Container class to store the values read by cReadModelTables.

Data Model Classes

Name	Description
cProductiveStructure	Build the productive structure of a plant.
cExergyData	Get and validate the exergy data values for a state of the plant.
cFormatData	Get the format configuration data used to display tables of results.
cResultTableBuilder	Build the cResultInfo objects for the calculation layer.
cResourceData	Gets and validates the external cost resources of a system.
cResourceCost	Compute the resource cost values properties for a state.
cWasteData	Store the waste data information.

Result Info Classes

Name	Description
cResultId	Base class for the calculation layer classes.
cResultSet	Base class for results classes.
cResultInfo	Container class for the application results.
cDataModel	Create the data model object.
cModelData	Container class for the Data Model structure.
cThermoeconomicModel	Create the thermoeconomic model results object.
cModelResults	Container class for the Thermoeconomic Model Results.

Thermoeconomic Analysis Classes

Name	Description
cExergyModel	Build the Flow-Process exergy model.
cExergyCost	Calculate the exergy cost of flows and processes.
cDiagnosis	Make a thermoeconomic diagnosis analysis.
cWasteAnalysis	Analyze the potential cost saving of waste recycling.
cDiagramFP	Build the adjacency tables of the Diagram FP.
cProductiveDiagram	Build the productive diagrams' adjacency tables.
cSummaryResults	Gets the summary results tables of the model.
cSummaryOptions	Determine the summary options depending on the data model.
cSummaryTable	Stores the properties and values of each summary table.
cDigraphAnalysis	Analyze the productive structure digraph.

Result Tables Classes

Name	Description
cTable	Abstract class for tabular data.
cTableIndex	Create a cTable with the index table of a cResultInfo.
cTableData	Implement a cTable to store data model tables.
cTableResult	Abstract class to store results into a cTable.
cTableCell	Implement a cTableResults interface to store the results as cell arrays.
cTableMatrix	Implement a cTableResults interface to store the matrix results.
cTablesDefinition	Read and store the tables format configuration file.

Graph Presentation Classes

Name	Description
cGraphResults	Abstract class used to show graphs in interactive mode and apps.
cGraphCost	Plot the irreversibility-cost Table.
cGraphDiagnosis	Plot the diagnosis Graphs.
cGraphDiagramFP	Plot the FP Diagram.
cGraphRecycling	Plot the waste recycling cost graphs.
cGraphSummary	Plot the summary graphs for selecting flows or processes.
cGraphWaste	Plot the waste allocation graph.
cDigraph	Plot the productive structure digraphs.

Tables Conversion Classes

Name	Description
cBuildHTML	Convert a cTable object into HTML files.
cBuildLaTeX	Convert a cTable object into a LaTeX code table.
cBuildMarkdown	Convert a cTable object into a Markdown code table.
cViewTable	Show a result table using a GUI (uitable).

Data Structures Classes

Name	Description
cQueue	A simple FIFO queue based on a dynamic cell array.
cDictionary	Implement a (key/id) dictionary for TaesLab.
cDataset	Creates a container to store data and to access it by key or index.
cSparseRow	Store and operate with matrices that contain few non-null rows.

Additional Files

Name	Description
printformat.json	Configuration file to define the format of the results tables.
styles.css	CSS file to define the styles of the HTML tables.