WaterDistributionNetworkScenarioSimulator

+ epanet: EpyT-MSX

+ sensor_config: SensorConfig

+ epanet_events: list(EpanetEvent)
+ sensor_events: list(SensorReadingEvent)

+ __init__(inp_file, msx_file)

+ get_scenario_info(): ScenarioInfo

+ set_general_parameters(demand_model, quality_type, time_steps, ...)
+ randomize_demands()

+ add_demand_uncertainty(Uncertainty)

+ add_epanet_event(EpanetEvent)
+ add_leakage(Leak)

+ add_sensor_reading_event(SensorReadingEvent)
+ add_sensor_fault(SensorFault)
+ add_sensor_uncertainty(SensorUncertainty)

+ add_simple_chlorine_injection(node_id, source_type, pattern)

+ run_simulation(DataExport, hyd_export=False)
+ run_advanced_quality_simulation(HydData, DataExport)

epyt_flow.data.networks

+ load_hanoi(demand_profile, download_dir): WaterDistributionNetworkScenarioSimulator

+ load_ltown(demand_profile, download_dir): WaterDistributionNetworkScenarioSimulator

+ load_net1(download_dir): WaterDistributionNetworkScenarioSimulator

epyt_flow.data.scenarios

+ load_leakdb(scenario_id, download_dir): ScenarioResults

+ load_battledim(download_dir): ScenarioResults

ScenarioResults

+ senario_info: ScenarioInfo
+ sensor_readings

+ load(file_in)
+ to_numpy()
+ export(DataExport)
+ get_anomalous_time_points(): list(int)

ScenarioInfo

+ inp_file: str
+ msx_file: str
+ general_params: dict
+ sensor_config: SensorConfig
+ epanet_events: list(EpanetEvent)
+ sensor_events: list(SensorReadingEvent)

+ __init__(...)

SensorConfig

+ pressure_sensors: list(int)

+ flow_sensors: list(int)

+ ...

DataExport

+ file_out: str

+ __init__(file_out, output_info)

+ export(ScenarioInfo, sensor_readings)

NumpyDataExport

ExcelDataExport

CsvDataExport

MatlabDataExport

EpanetEvent

+ start_time: int
+ end_time: int

+ apply(EpyT-MSX)

Leakage

+ location: int
+ diameter: float
+ profile: Pattern

+ __init__(location, start_time, end_time, diameter, profile)
+ apply(EpyT-MSX)

AbruptLeakage

+ __init__()

IncipientLeakage

+ peak_time: int

+ __init__(peak_time)

SensorReadingEvent

+ start_time: int
+ end_time: int
+ sensor_id: int
+ sensor_type: int

+ __init__(...)
+ apply(SensorConfig, SensorReadings)

SensorFault

+ apply(SensorConfig, SensorReadings)

SensorUncertainty

+ uncertainty: Uncertainty

+ __init__(Uncertainty)
+ apply(SensorConfig, SensorReadings)

StuckAtZero

+ apply(...)

Drift

+ param: float

+ apply(...)

ConstantOffset

+ param: float

+ apply(...)

Uncertainty

+ apply(data)

GaussianUncertainty

+ params

+ __init__(params)
+ apply(data)

UniformUncertainty

+ params

+ __init__(params)
+ apply(data)

DeepUncertainty

+ params

+ __init__(params)
+ apply(data)