Endat
Thermal Power Plant Simulations

PROSIM

Versatile tool for
complete power plant simulation

- Simulation of thermal power plants
- Advanced furnace simulation
- Simulation of utility boilers

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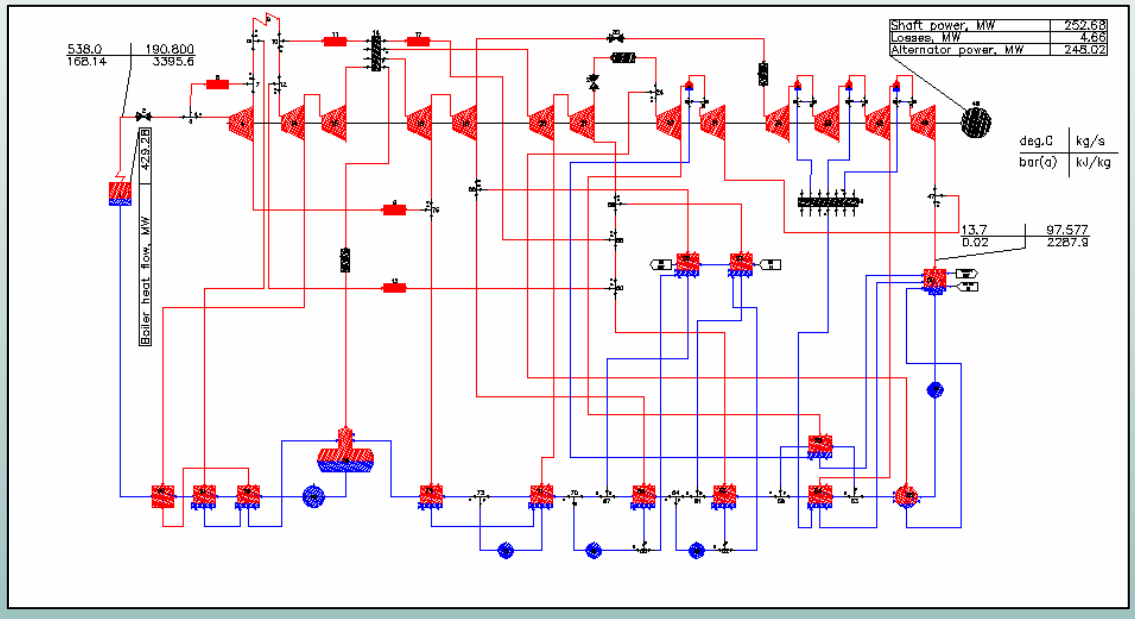
Simulation of power plants

Prosim is a software package for simulation of power plant processes. Prosim makes it easy to calculate all power plant processes from simple co-generation power plants to complex combined cycle plants both nominal and partial loads.



Use Prosim to calculate thermal power plants for number of different calculations.

- Combined cycle
- Cogeneration plants
- Condensing plants
- Nuclear power plants
- Power plants of kraft pulp mills
- etc

- Planning of a new power process
- Calculating process modifications
- Calculating dimensioning data
- Performance tests of turbines
- Off-design simulations

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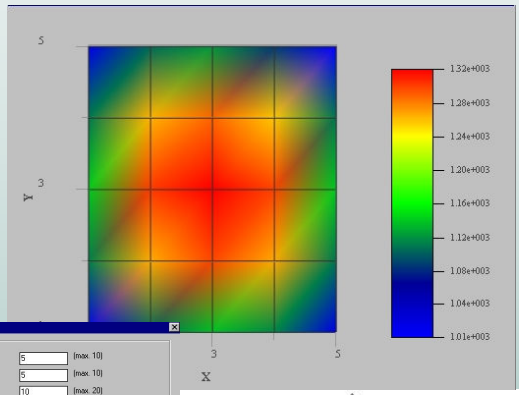
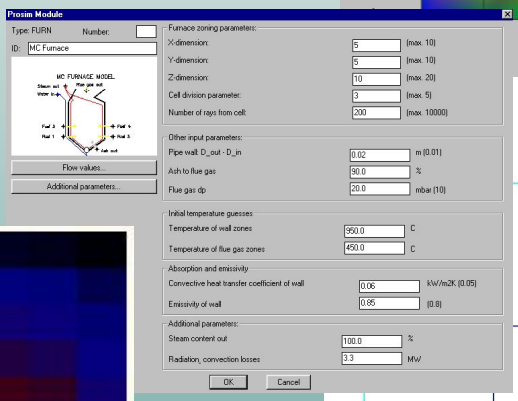
Advanced furnace calculation module

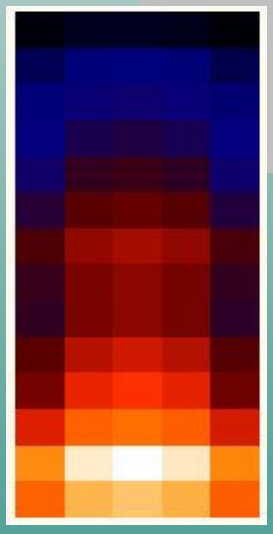
The advanced furnace calculation module uses a modified Monte Carlo method for accurate estimation of radiative heat transfer in furnaces. Different shapes and firing configurations of furnaces can be evaluated with the furnace calculation module.
Calculation cases can include up to 3000 zones for highly accurate calculation, or a smaller amount of zones for fast estimations of heat transfer cases.

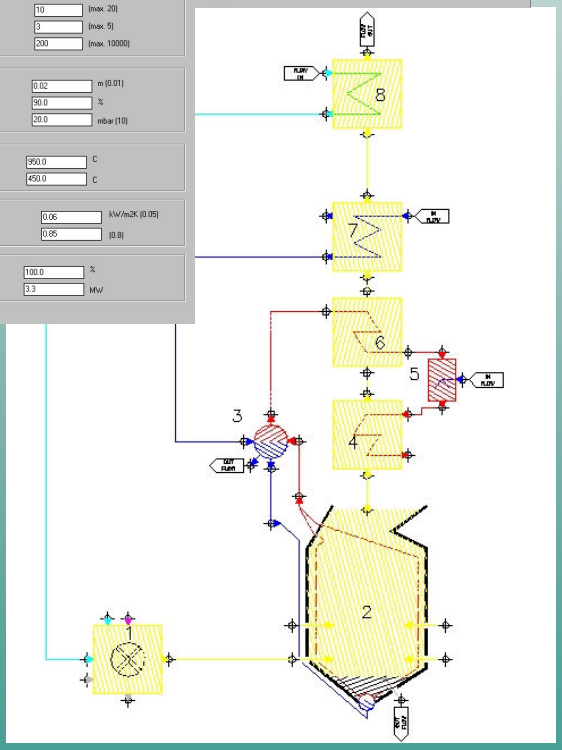
Calculate the effects of burner configuration changes on temperature distributions at the furnace exit and the furnace walls.

Estimate results of fuel changes on furnace temperatures and evaluate retrofit strategies with the help of the module.









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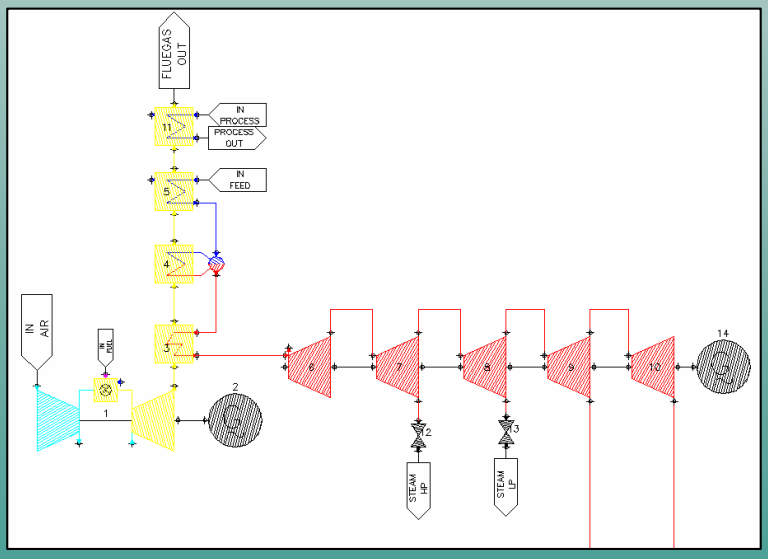
Simulation of utility boilers

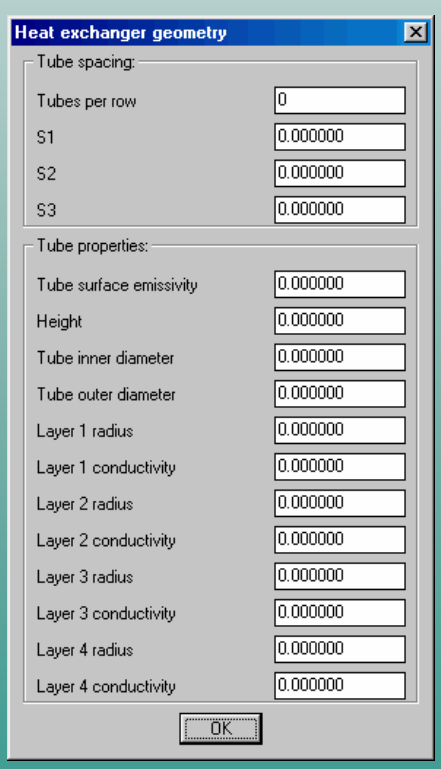
Prosim includes different levels to model a boiler: boiler can be modelled very simply as black box or even give geometry of all heat exchangers. One fast way to model boiler is to use a simple model containing burning calculation without individual heat exchanger calculation.

Prosim includes energy balance based- heat exchanger modules. They are useful, when geometry is unknown or irrelevant. These modules can be used when faster modelling is needed.

More advanced heat exchanger modules in Prosim calculate heat exchange according to methods described in VDI Heat Atlas taking geometry, flow characteristics and gas radiation into consideration.

Superheater and economizer modules allow user to estimate the required heat exchanger surface area, when designing a process. Afterwards user can estimate their performance at different operating loads and conditions.





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