



# PROCESS SIMULATIONS LTD

*Solving Industrial Problems through Process Modeling*

**PSL** assists clients with their industrial problems in primary industries by solving complex issues to help customers improve operational efficiency to stay globally competitive. By providing comprehensive consulting services and tools, PSL provides customers facing difficult problems operating large capital-intensive equipment reduce costs and eliminate unscheduled down time. Our success in consulting services to the primary industry consists of combining:

- fundamental engineering knowledge in the area of fluid mechanics, heat transfer, mass transfer, and combustion,
- performing process modeling and simulating production critical industrial equipment, and
- collecting valuable information from equipment operators that have developed an intuitive understanding of the operation of the equipment.

We constantly interact with all levels in mills, from managers to operators, and follow up on mill decisions and implementations of recommendations. PSL's unique consulting services using process modeling is gaining approval among some of the major pulp and paper companies.

## AREAS OF EXPERTISE

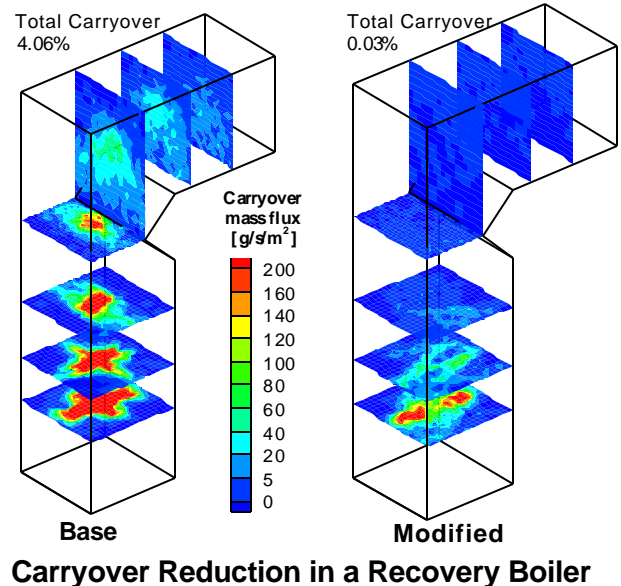
PSL has worked on developing state of the art process models and has experience with the following equipment:

- *Recovery boilers*
- *Bark and utility boilers*
- *Digesters*
- *Headboxes*
- *Lime kilns*
- *Drying kilns*
- *Gas burners*
- *Flue gas ducts and precipitators*
- *Air ports and flow nozzles*
- *Hydrocyclones*

## PSL CLIENTS

PSL's clients include:

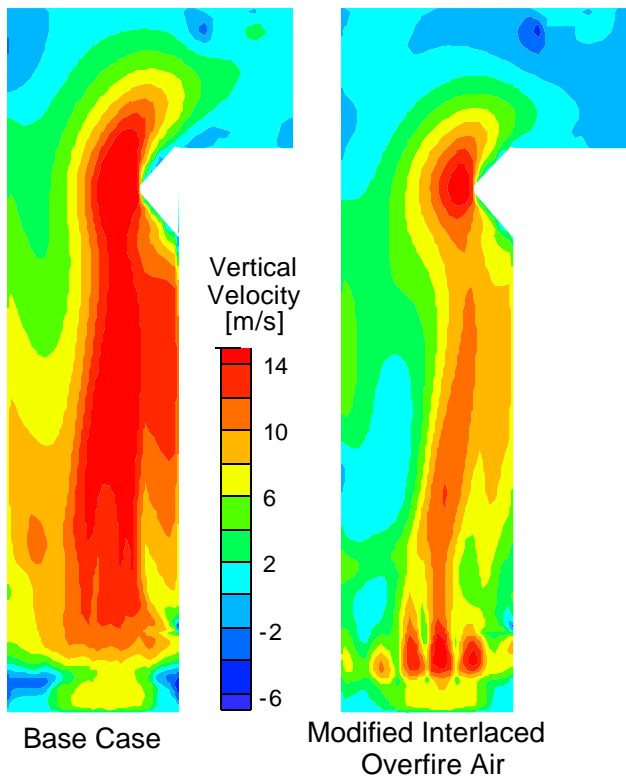
- *Weyerhaeuser*
- *Canadian Forest Products*
- *Anthony-Ross*
- *Ahlstrom*
- *Sandwell*
- *Kværner*
- *Georgia Pacific*
- *Tasman Pulp*
- *Weldwood of Canada Limited*



## PROCESS MODELING

For each equipment investigated, PSL

- Collects physical and operational characteristics and builds a model
- Provides detailed information of processes throughout equipment
- Determines the root cause of problems and evaluates the success of proposed operational and design changes
- Evaluates "what if" scenarios to improve operation and design



**Bark Boiler Vertical Gas Velocity**

## CUSTOMER VALUE

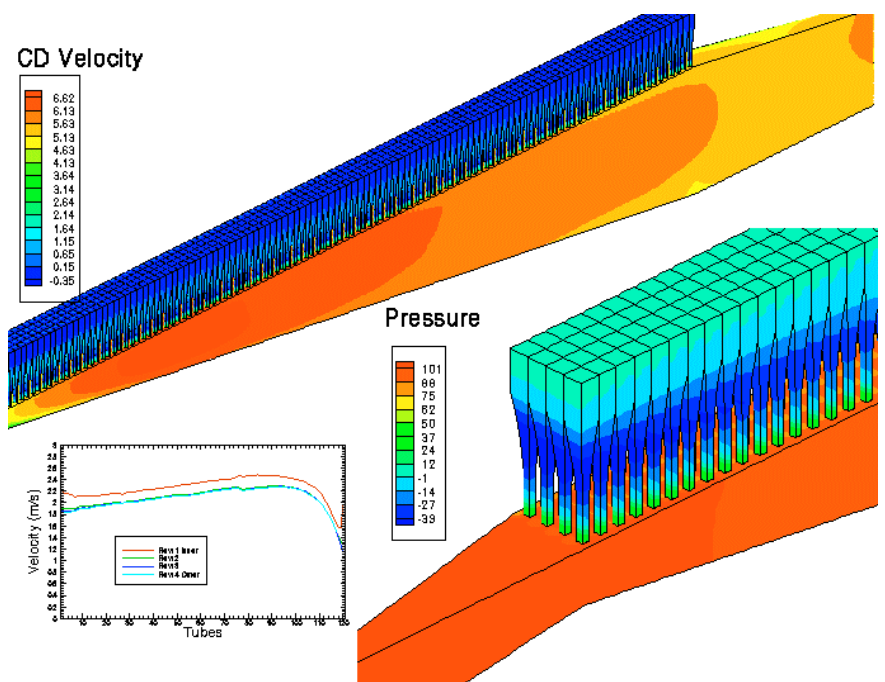
- PSL provides detailed analysis and important recommendations for operational and design changes
- Customers benefit from better equipment performance and reliability
- PSL provides knowledge that has significant impact on decision-making
- Reduces risk in retrofits and the purchase of new equipment

## PSL ADVANTAGE

- Independent analysis
- Process simulation expertise in very difficult applications
- PSL is directly involved in the development of advanced and verified simulation tools

## WHAT PSL CAN DO FOR YOU

- Evaluate proposed retrofits by competing suppliers when you need to upgrade equipment
- Help evaluate new equipment purchases, putting you in an advantageous position as to base capital expenditures on independent information
- Improve equipment efficiency by determining inadequate operating procedures and proposing alternatives
- Evaluate new operating strategies to comply with environmental emissions
- Simulation results can then be used as part of advanced customised training and simulator software



**Headbox Flow Velocity and Pressure Distribution**

## PROCESS SIMULATIONS LIMITED

Consulting engineers specializing in the modeling and analysis of industrial process equipment including:

- Recovery Boilers
- Biomass/Utility Boilers
- Headboxes
- Digesters
- Lime Kilns
- Wood Kilns
- Hydrocyclones
- Air Ports, Nozzles, Ducts



204 - 2386 East Mall, Vancouver, BC, Canada V6T 1Z3  
 Tel: (604) 822-1490, Fax: (604) 822-1934, Email: info@psl.bc.ca, Web: www.psl.bc.ca