1998 **Title:** **Ten Years Experience with CFD Modeling of Recovery Boilers**

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ABSTRACT:

There has been widespread implementation of CFD models for recovery boilers since their inception ten years ago. Improvements in computer hardware, software algorithms, fundamental data, and end-user acceptance has made CFD models practical for commonly experienced mill problems. However, the models still require highly specialized knowledge to set-up, run, and ultimately interpret the results. Also, as of yet, there is no “generic” commercially available module for black liquor combustion, necessitating customization of other general models.

Continued development has yielded CFD-based recovery boiler models that satisfactorily calculate black liquor trajectories and combustion behavior, flue gas temperatures, heat fluxes, and, to a lesser extent, flue gas chemistry. Spin-offs from combustion modeling include calculations for ducting and air nozzles, calculation of heat transfer, and modeling of auxiliary equipment for recovery boilers.