Title	Automatic Control of Crossflow Grain Dryers, Part 2: Design of a Model-Predictive Controller
Author	Qiang Liu and F. W. Bakker-Arkema
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Abstract

Continuous-flow grain drying is a non-linear process with a long delay; it is often subjected to large disturbances, and therefore is difficult to control. In this paper, a new model-predictive control system for crossflow dryers is presented. The controller uses a recently developed distributed parameter process model along with a grain flowrate optimizer for feedforward control, and a parameter estimator/modifier for feedback action. Simulation tests on a virtual dryer show that the controller performed well over a wide range of drying conditions. This paper is followed in Part 3 by a description of the field testing of the model-predictive controller on a commercial crossflow grain dryer.