

Applied optimization and control problems

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Abstract

I will survey some of the opportunities for optimization and control in the industrial process of making paper. The physical parameters of the problem are impressive: a paper-making machine emits a 10-metre wide sheet of paper travelling at 100 km/h. Dirt, noise, and sparse measurements all add to the challenge, namely, to automate the machine's operation so that the paper produced has physical characteristics that meet the customer's requirements and are uniform across the width of the sheet. UBC's Pulp and Paper Research Centre has a group working on "cross-directional control". I will report on some of our recent successes and ongoing challenges.

Key Words: Noise, sparse data, model predictive control, causality.