

## MULTICRITERIA OPTIMIZATION IN PAPER MAKING PROCESSES

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In many application of axially moving materials, such as paper making processes, printing presses, magnetic tapes and belt drives, there is a demand for driving or running the system at a fast speed and, at the same time, avoiding damages. In such systems, an increase in tension has a stabilizing effect but a decrease in tension may lead to a loss of stability. From the viewpoint of longevity, tension has an opposite effect : high tension may lead to grooving or arising of cracks and low enough tension then quarantees safe conditions. In this context using the limit velocity, longevity and runnability effectiveness criteria we formulate and solve the following multicriteria optimization problem. It is required to determine the optimal value of in-plane tension that gives a maximum of the considered vector function. The expression for the optimized functional components and for pareto front are found analytically. The obtained analytical results are illustrated numerically.

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