

### Sensitivity analysis of non-Newtonian fluids as a viscopillary model in slot coating flow

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The sensitivity of the process system is typically analyzed from the frequency response method, measuring the sinusoidal variation of output variables with respect to different ongoing disturbances in the model. In this study, the sensitivity using 1-D and 2-D models for slot coating bead flow analysis has been investigated to predict effects of periodic disturbances such as flow rate, vacuum pressure, web speed and coating gap. It turns out that variations of wet film thickness and position of upstream meniscus under sinusoidal web speed condition from 1-D model are almost same as those by 2-D model. Amplitude ratio of film thickness is decreasing with the frequency of disturbances in web speed and flow rate, whereas, it is increasing with the frequency of disturbances in coating gap and bead pressure.