**SELF OPTIMIZING CONTROL DESING FOR A BINARY DISTILLATION COLUMN**

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Process engineers are often called to seek for control alternatives that allow reducing operating costs of a plant and continuously maintaining the economic optimum. Therefore, advanced control techniques and holistic approaches have to be employed. In this paper, we consider the control structure design by means of the self optimizing technique for a distillation column, whose solution is a classical configuration of dual control. Additionally, it is proposed to use the predictive control strategy (model predictive control - MPC) with recalculation of the set-points (target calculation - TC), considering only optimal solutions that are feasible for the control variables. This update prevents the operation from significant economic losses when facing input disturbances. An algorithm to prioritize constraints to violate only the necessary is also employed. According to the results, the proposed MPC/TC strategy guarantees the stability of the process and operation around the economic optimum. Specifically, the success of the control scheme is due to the update of the set-point for the bottom composition.



Performance comparison among the composition control alternatives.