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The setup of solidification phase transferring (SPT) model and its application in steel continuous casting

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ABSTRACT

The Phase transferring from liquid to solid of steel or other alloys is very important in material designing and material production processes. It has been proved that the behavior (such as heat exchanging, contracting, etc.) of the alloys during solidification mainly depends on phases ratio of liquid and solid. It is essential to determine the amount of the liquid and solid phases both by test and theory during solidification. In this paper, a way to determine the phases quantitatively during solidification has been proposed, and a model of the heat exchanging in continuous casting process has been established. With this model, the numerical simulation results coincide very well with the trial data in industry.

KEYWORDS: solidification phase transferring, heat exchanging, continuous casting, numerical simulation