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Dynamic optimal cooling control for continuous casting of steel. (English) [Zbl 1034.80006](#)

Lapin, A. (ed.) et al., Numerical methods for continuous casting and related problems. Proceedings of the Russian-Finnish workshop held in Kazan, Russia, April 14–18, 2001. Kazan: DAS Publisher (ISBN 5-8185-0023-3/pbk). Tr. Mat. Tsentra im. N. I. Lobachevskogo 9, 20-31 (2001).

Summary: We consider the dynamic optimal cooling strategy for continuous casting under changing casting speed. We use as a simulation model the diffusion convection equation with phase transition. The finite element approximation of these equations is used. The cost function can have several objectives and constraints which are used as the penalty terms. A dynamic programming method is used for solving the finite dimensional optimal control problem. Numerical results are presented.

For the entire collection see [\[Zbl 1011.00041\]](#).

MSC:

- 80M50** Optimization problems in thermodynamics and heat transfer
- 80A10** Classical and relativistic thermodynamics
- 90C39** Dynamic programming
- 49M37** Numerical methods based on nonlinear programming

Full Text: [EuDML](#)