

Title (en)
Method of producing a train running plan

Title (de)
Verfahren zum Erzeugen eines Zuglaufplanes

Title (fr)
Méthode de production d'un plan de roulage pour train

Publication
EP 0467377 B1 19970625 (EN)

Application
EP 91112062 A 19910718

Priority
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Abstract (en)
[origin: EP0467377A2] When the train is running, the target speed (Vn) of the train is set every small territory, a plurality of which are obtained by dividing the predetermined territory having a fixed limit speed (Vmax) thereinto, and the consumed energy (E) and the running time (T) of the train are obtained in such a way that after accelerating the train by the maximum accelerating force, or decelerating it by the maximum decelerating force, the train runs at the fixed speed in accordance with a target speed (Vn) thus set. By carrying out such a processing repeatedly, the target speeds (Vn) of all the small territories are set so that the train runs in the predetermined running time (T) and the consumed energy (E) becomes minimum. In the case where the consumed energy (E) of the target speed (Vn) when the limit speed (Vmax) is constant, and the target speed (Vn) of one small territory are changed, the change ratio (DELTA E/ DELTA T) of the consumed energy (E) of the target speed (Vn) to the running time (T) is obtained, and on the basis of the change ratio (DELTA E/ DELTA T) with respect to the consumed energy, the subsequent target speed (Vn) where the consumed energy (E) becomes minimum is obtained.

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B61L 3/00; **B61L 27/00**

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5th National Symposium for Utilization of Cybernetics in a Railway, June 1968, pp.11-16, Individual Train Control, "Optimal Run Curve Calculation by Dynamic Programming", by E. Yamazaki and T. Kunikata.

Cited by
CN104401370A; CN109606432A; CN113671947A; DE19935350A1; CN111527019A; CN114348067A; GB2416900A; US5602739A; EP0615891A1; US5487516A; EP0539885A3; DE19935351A1; CN104192176A; EP2292492A3; AU2008201906B2; AU2008201906C1; AU2008201906B9; FR2728856A1; EP0719690A3; CN102897193A; DE19935349A1; EP0755840A1; NL1000896C2; CN105452085A; US2016129926A1; EP3023314A4; CN112278015A; GB2405016A; GB2405016B; DE10147231A1; DE19935352A1; DE19935353A1; US9669851B2; US9834237B2; US9733625B2; US10137911B2; US10308265B2; US10569792B2; US6668217B1; WO03097424A1; WO9429827A1; WO2007124196A1; US7447571B2; US6665609B1; US6799096B1; US7822491B2; EP2735491B1; EP1470018B1

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