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ERRATA CORRIGE

Approximate Solution of Singularly Perturbed Nonlinear Pursuit-Evasion Games

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Abstract. Several errors in Ref. 1 are corrected.

Key Words. Zero-sum differential games, singular perturbations, extended value, feedback control.

In Ref. 1, several errors were found and should be corrected as follows.

(i) Equation (40) should read

$$J[Z_0, u(\cdot, \epsilon), \tilde{v}(\cdot, \epsilon)] \geq W[Z_0, \epsilon] - \sum_{i=1}^{n} \int_{t_{0i}}^{t_{fi}} \Delta\mathcal{H}_e \, dt.$$

(ii) Equations (52) and (53) should be respectively replaced by

$$-\Delta\mathcal{H}_p(\epsilon) = [\partial\mathcal{H}/\partial u]_{u^*,v}(\Delta u) + \tfrac{1}{2}[\partial^2\mathcal{H}/\partial u^2]_{u^*,v}(\Delta u)^2 + \cdots,$$

$$-\Delta\mathcal{H}_e(\epsilon) = [\partial\mathcal{H}/\partial v]_{u,v^*}(\Delta v) + \tfrac{1}{2}[\partial^2\mathcal{H}/\partial v^2]_{u,v^*}(\Delta v)^2 + \cdots.$$

(iii) Consequently, Eqs. (55) and (56) should read

$$\Delta\mathcal{H}_p(\epsilon) = -\tfrac{1}{2}[\partial^2\mathcal{H}/\partial u]_{u^*,v} \times O(\epsilon^2),$$

$$\Delta\mathcal{H}_e(\epsilon) = -\tfrac{1}{2}[\partial^2\mathcal{H}/\partial v]_{u,v^*} \times O(\epsilon^2).$$

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(iv) In Eq. (76), a sign change is required. The correct form of Eq. (76) is

$$\lambda_1 = -1/[f_{p1}(x_f, y_{pf}, u_f^*) + f_{e1}(x_f, y_{ef}, v_f^*)].$$

References

1. FARBER, N., and SHINAR, J., *Approximate Solution of Singularly Perturbed Nonlinear Pursuit-Evasion Games*, Journal of Optimization Theory and Applications, Vol. 32, No. 1, 1980.