Corrigendum

Hirotsu N and Wright M (2002). Using a Markov process model of an association football match to determine the optimal timing of substitution and tactical decisions

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This paper contains the following errors, for which we apologise.

1. Equations (8) and (9) should be replaced by

$$\Omega_m(T+dt) = \max \begin{cases} A_m \Omega_m(T)dt + \Omega_m(T) & \text{no substitution should yet be made with time } T \text{ remaining} \\ A_m \Omega_s(T)dt + \Omega_s(T) & \text{now making the substitution } (M \rightarrow S) \text{ at time } T \text{ remaining} \end{cases} \quad (8)$$

$$\Omega_s(T+dt) = A_s \Omega_s(T)dt + \Omega_s(T) \quad \begin{matrix} \text{a substitution has already been made and there is time } T \text{ remaining} \end{matrix} \quad (9)$$

2. Equations (10) and (11) should be replaced by

$$\Omega_m(T+dt) = \max \begin{cases} A_m \Omega_m(T)dt + \Omega_m(T) & \text{not changing tactics (tactics } M \rightarrow M) \\ A_m \Omega_s(T)dt + \Omega_s(T) & \text{changing tactics (tactics } M \rightarrow S) \end{cases} \quad (10)$$

$$\Omega_s(T+dt) = \max \begin{cases} A_s \Omega_s(T)dt + \Omega_s(T) & \text{not changing tactics (tactics } S \rightarrow S) \\ A_s \Omega_m(T)dt + \Omega_m(T) & \text{changing tactics (tactics } S \rightarrow M) \end{cases} \quad (11)$$

3. Equations (12) and (13) should be replaced by

$$\Omega_m(T+dt) = \max \begin{cases} A_m \Omega_m(T)dt + \Omega_m(T) & \text{not changing tactics (M} \rightarrow \text{M)} \\ \int_{T-\Delta T_1}^T A_m \Omega_m(t)dt & \text{changing tactics (M} \rightarrow \text{S)} \\ + \int_{T-\Delta T_1-\Delta T_2}^{T-\Delta T_1} A_s \Omega_s(t)dt & \\ + \Omega_s(T-\Delta T_1-\Delta T_2) & \end{cases} \quad (12)$$

$$\Omega_s(T+dt) = \max \begin{cases} A_s \Omega_s(T)dt + \Omega_s(T) & \text{not changing tactics (S} \rightarrow \text{S)} \\ \int_{T-\Delta T_1}^T A_s \Omega_s(t)dt & \text{changing tactics (S} \rightarrow \text{M)} \\ + \int_{T-\Delta T_1-\Delta T_2}^{T-\Delta T_1} A_m \Omega_m(t)dt & \\ + \Omega_m(T-\Delta T_1-\Delta T_2) & \end{cases} \quad (13)$$

Reference

- 1 Hirotsu N and Wright M (2002). Using a Markov process model of an association football match to determine the optimal timing of substitution and tactical decisions. *J Opl Res Soc* **53**: 88–96.

University of Lancaster