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CORRIGENDUM

Trajectory design via unsupervised probabilistic learning on optimal manifolds – Corrigendum

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Keywords: Diffusion map; planetary reentry trajectory; probabilistic learning on manifolds; trajectory optimization; unsupervised learning

The authors have provided the following four corrections after publication:

Firstly, in the Introduction, the opening phrase: "Real-time trajectory optimization for hypersonic vehicles…" (p.1) is replaced with "Real-time optimization of planetary reentry trajectories…". The corrected text therefore reads as follows:

"Real-time optimization of planetary reentry trajectories is a difficult task that requires simultaneous accounting for constraints related to flight dynamics, vehicle limitations during flight, variable initial and terminal conditions, and a high-dimensional parameter set for the models employed for these systems." (p.1)

Secondly, the phrase "hypersonic problems" in the following sentence on p.2 is corrected with the phrase "planetary reentry problems":

"However, the computational expense for direct methods cannot be estimated *a-priori*, and solution convergence cannot always be guaranteed for hypersonic problems." (p.2)

Corrected text:

"However, the computational expense for direct methods cannot be estimated *a-priori*, and solution convergence cannot always be guaranteed for planetary reentry problems." (p.2)

Thirdly, the phrase "atmospheric reentry of hypersonic vehicles" in the following sentence has also been corrected with "planetary reentry":

"Typical applications include the approximation of optimal state-feedback control laws for interplanetary transfers (Izzo et al., 2019) and planetary soft-landing maneuvers (Sánchez-Sánchez and Izzo, 2018), as well as the real-time onboard generation of a high number of optimal trajectories for either asteroid landing (Cheng et al., 2020) or atmospheric reentry of hypersonic vehicles (Shi and Wang, 2020, 0)." (p. 2)

Corrected text reads:

"Typical applications include the approximation of optimal state-feedback control laws for interplanetary transfers (Izzo et al., 2019) and planetary soft-landing maneuvers (Sánchez-Sánchez and Izzo, 2018), as well as the real-time onboard generation of a high number of optimal trajectories for either asteroid landing (Cheng et al., 2020) or planetary reentry (Shi and Wang, 2020, 0)." (p. 2)

Lastly, in Section 2. Modeling Framework, the phrase "the reentry trajectory of a hypersonic vehicle" should be replaced with "the planetary reentry of a vehicle" in the following sentence:

"We consider a 3DOF model (Busemann et al., 1976) to describe the reentry trajectory of a hypersonic vehicle assumed as a point of mass inside a planetary atmosphere."

Corrected text:

"We consider a 3DOF model (Busemann et al., 1976) to describe the planetary reentry of a vehicle assumed as a point of mass inside a planetary atmosphere."

Reference

1. **Safta C**, **Ghanem R**, **Grant M**, **Sparapany M, and Najm H** (2022) Trajectory design via unsupervised probabilistic learning on optimal manifolds. *Data-Centric Engineering*, *3*, E26. doi:10.1017/dce.2022.26.

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