



Supplementary Item 4:

Linear mixed model estimates and 95% confidence intervals (square root transformed). Statistical comparison of the 4 different IMU algorithms (algorithms 1,2,3,4) and the algorithm combination using open software (R, version 3.2.3^d) and the package “nlme” (version 3.1-121) for linear mixed effects model. Accuracy (Accuracy) of the computed parameters (i.e. hoof-on/off) was calculated as the difference in milliseconds between the IMU/Motion capture generated data and the data from the FP (bias). Square root transformed absolute Accuracy for the stance duration was used as the outcome variable. HorseID was used as random effect to account for the correlated observations within horse; explanatory variables are algorithm, gait, limb and the interaction between limb and algorithm. A constant variance function (varIdent) for algorithm was added to the model to take the different variances between algorithms into account. The front limb at walk for the algorithm combination was used in the model as reference for comparison. *: represents the model estimation for the gait trot, when compared to the walk (i.e. trot accuracy is further away from zero, therefore inferior). **: represents the model estimation for the hindlimb, when compared to the forelimb (i.e. hindlimb accuracy is closer to zero, therefore better).

	Model estimate	Lower limit 95% confidence interval	Upper limit 95% confidence interval	P value
Forelimb: Algorithm combination: Walk	4.43	3.95	4.92	<0.0001
Trot' *	5.45	4.67	6.23	<0.0001
Hindlimb' **	3.69	2.59	4.80	0.02
Forelimb': Algorithm1'	4.30	3.10	5.50	0.72
Hindlimb': Algorithm1'	6.35	5.12	7.58	<0.0001
Forelimb': Algorithm2'	6.92	5.71	8.13	<0.0001
Hindlimb': Algorithm2'	4.61	3.38	5.84	0.65
Forelimb': Algorithm3'	5.01	3.97	6.05	0.04
Hindlimb': Algorithm3'	5.19	4.13	6.27	0.01
Forelimb': Algorithm4'	7.29	6.17	8.41	<0.0001
Hindlimb': Algorithm4'	5.4	4.26	6.56	<0.0001