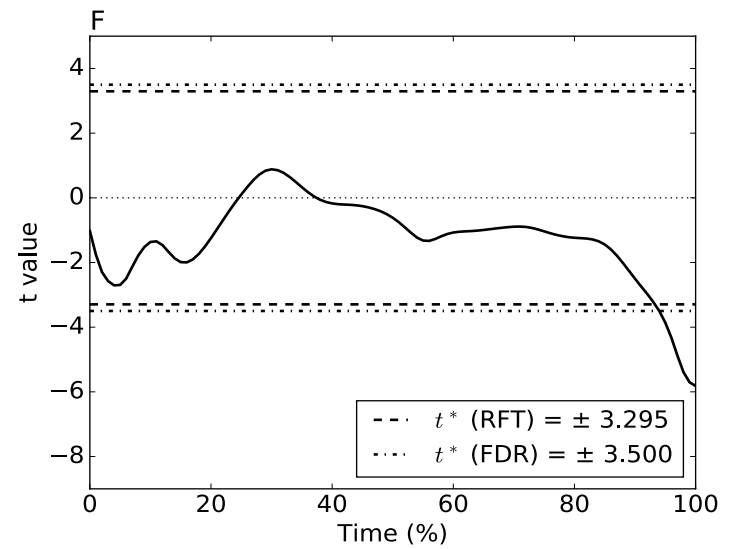
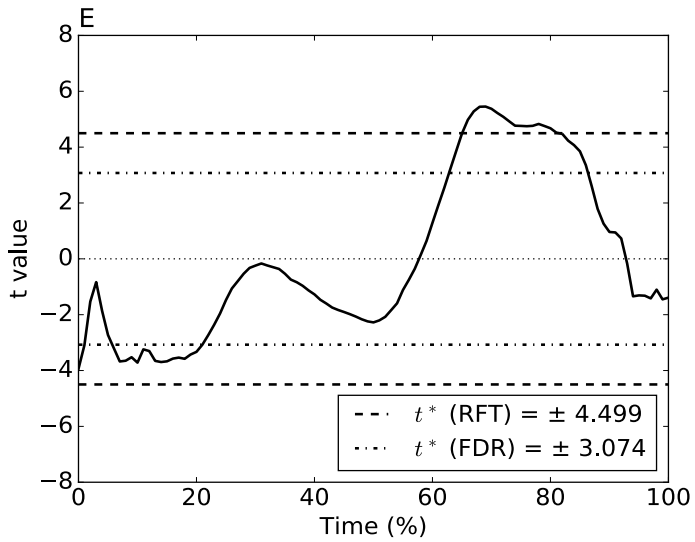
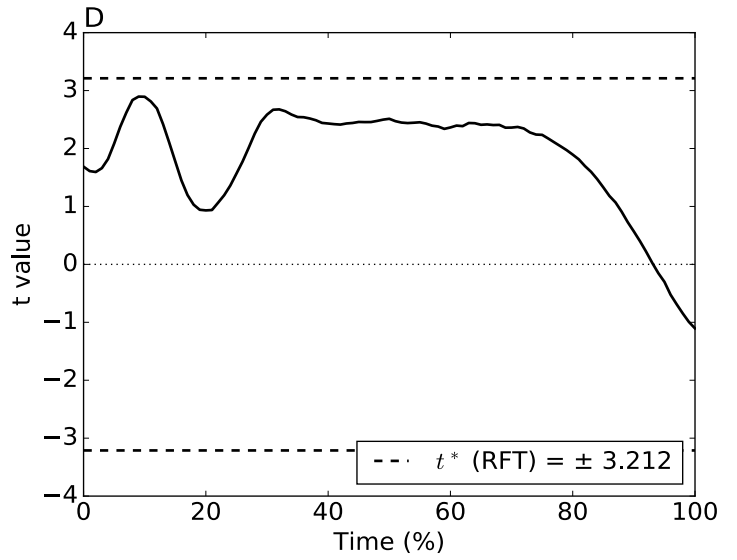
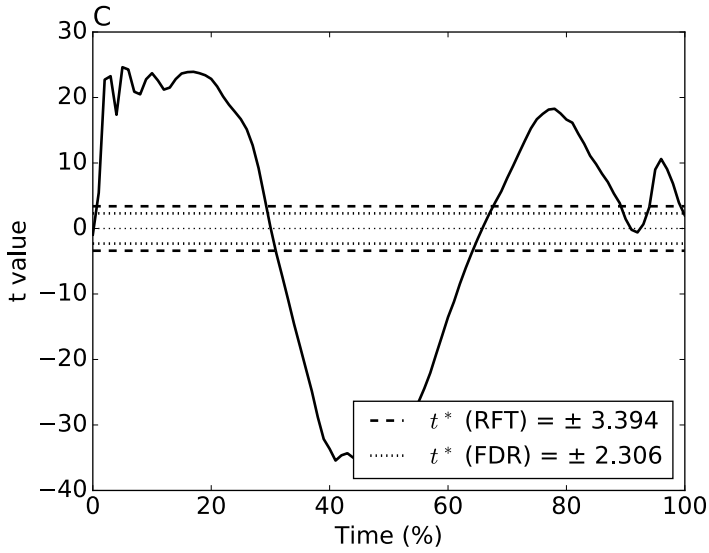
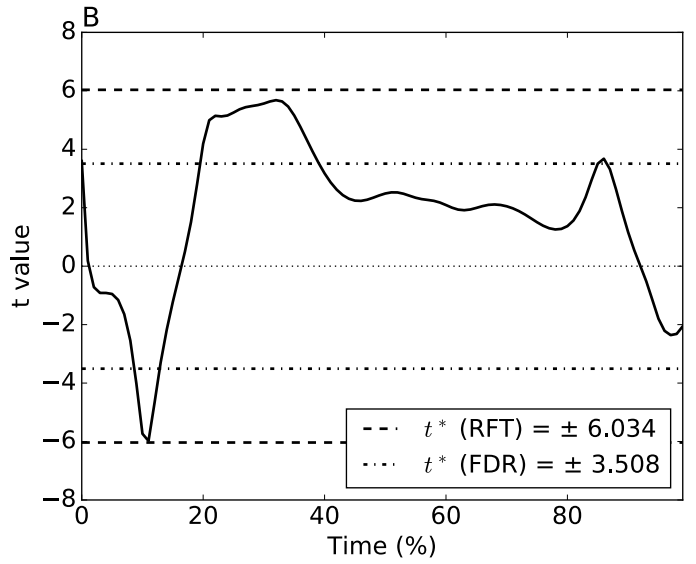
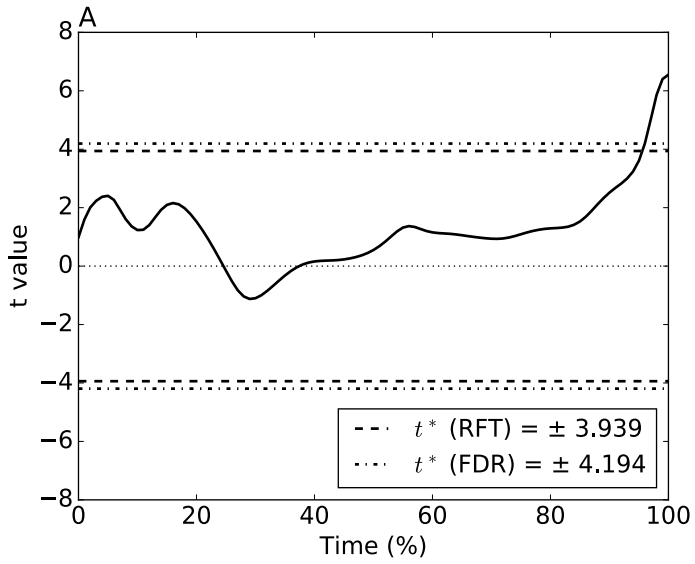


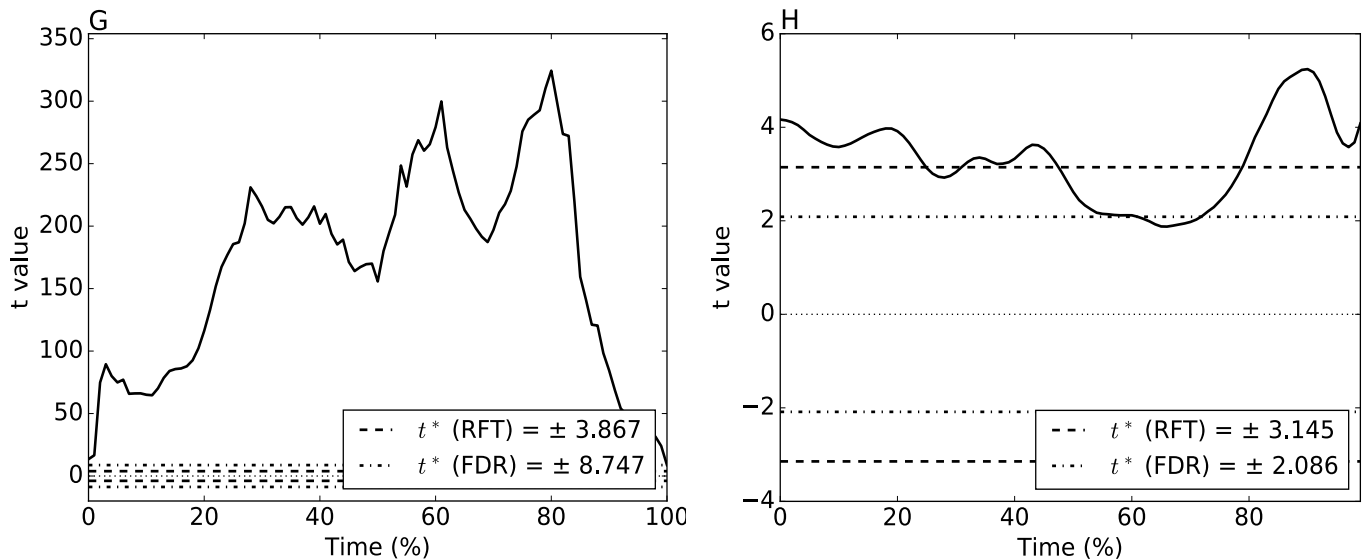
# Appendix E: Experimental datasets

This appendix contains RFT and FDR results (Fig.E1) from six experimental datasets and a total of eight different analyses (Table E1) that were conducted but were not included in the main manuscript. The datasets represent a variety of biomechanical modalities, experimental designs and tasks.

**Table E1.** Experimental datasets and analyses. J and Q are the sample size and number of time nodes, respectively. GRF = ground reaction force. EMG = electromyography.

Dataset	Name	J	Q	Model	Task	Variables
A	Caravaggi et al., 2010	10	101	Paired t-test	Walking	Plantar arch deformation
B	Dorn, Schache & Pandy, 2012	7	100	Linear regression	Running/sprinting	GRF
C	Pataky et al., 2008	59	101	Linear regression	Walking	GRF
D	Neptune, Wright & Van Den Bogert, 1999	15	101	Two sample t-test	Cutting movement	Kinematics, EMG
E	Pataky et al., 2014	10	101	Paired t-test	Walking	Center of pressure
F	Caravaggi et al., 2010	19	101	Two sample t-test	Walking	Plantar arch deformation
G	Pataky et al., 2008	20	101	One sample t-test	Walking	GRF
H	Besier et al., 2009	40	100	Two sample t-test	Walking, running	GRF, muscle forces





**Figure E1.** Results from six datasets depicting two thresholds: false discovery rate (FDR) and random field theory (RFT). The null hypothesis is rejected if the t value traverses a threshold.

#### References:

- Besier TF, Fredericson M, Gold GE, Beaupré GS, Delp SL. 2009. Knee muscle forces during walking and running in patellofemoral pain patients and pain-free controls. *Journal of Biomechanics* 42:898–905. DOI: 10.1016/j.jbiomech.2009.01.032.
- Caravaggi P, Pataky T, Günther M, Savage R, Crompton R. 2010. Dynamics of longitudinal arch support in relation to walking speed: Contribution of the plantar aponeurosis. *Journal of Anatomy* 217:254–261. DOI: 10.1111/j.1469-7580.2010.01261.x.
- Dorn TW, Schache AG, Pandy MG. 2012. Muscular strategy shift in human running: dependence of running speed on hip and ankle muscle performance. *Journal of Experimental Biology* 215:1944–1956. DOI: 10.1242/jeb.064527.
- Neptune RR, Wright IC, Van Den Bogert AJ. 1999. Muscle coordination and function during cutting movements. *Medicine and Science in Sports and Exercise* 31:294–302. DOI: 10.1097/00005768-199902000-00014.
- Pataky TC, Caravaggi P, Savage R, Parker D, Goulermas JY, Sellers WI, Crompton RH. 2008. New insights into the plantar pressure correlates of walking speed using pedobarographic statistical parametric mapping (pSPM). *Journal of Biomechanics* 41:1987–1994. DOI: 10.1016/j.jbiomech.2008.03.034.
- Pataky TC, Robinson MA, Vanrenterghem J, Savage R, Bates KT, Crompton RH. 2014. Vector field statistics for objective center-of-pressure trajectory analysis during gait, with evidence of scalar sensitivity to small coordinate system rotations. *Gait and Posture* 40:255–258. DOI: 10.1016/j.gaitpost.2014.01.023.