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Leges Motus*



Seminar über Fragen der Mechanik

zu folgendem Vortrag wird herzlich eingeladen

Freitag, **18.11.2016, 13:30 Uhr**, Immerwahrstraße 1, Raum 01.025

Mobile motion analysis based on inertial measurement units – applications, models & methods

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Inertial measurement units (IMUs) are a promising technology for capturing and analyzing human motion outside the lab and under daily living activities. This is of particular interest in the area of sports and health. In this context, a major goal of the interdisciplinary research group wearHEALTH is to develop appropriate models and methods for online extraction of reliable and valid 3D kinematics, kinetics and spatiotemporal locomotion parameter information through an easy-to-handle system based on body-worn IMUs.

Within this talk, we will present the online probabilistic estimation and parameter identification methods developed within our group, focusing on model based sensor fusion using optimization and recursive filters. We will also highlight their relation to deterministic optimal control methods. This will be embedded into a short introduction to IMUs and results from applying these approaches to 3D kinematics estimation and simultaneous 3D kinematics and sensor-to-segment calibration estimation.

Finally, we will pose research questions at the intersection of human motion simulation and capturing using model based and data driven approaches.

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