

Modular Control through Locomotor Sub-functions

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Legged locomotion can be described as a composition of three elementary locomotor sub-functions, namely stance, swing and balance. Each of these sub-functions fulfills a specific goal and needs to be adjusted according to the desired motor task. The organization of these locomotor sub-functions in the biological system can be studied using biomechanical gait templates and experimental data on different gaits and gait conditions. With this knowledge a novel bio-inspired design and control approach can be derived and used for creating future legged systems and assistive devices.