IPSSC + CMBO

STUDENTS' CONFERENCE
Jožef Stefan International Postgraduate School
and Young Researchers' Day CMBO
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Arm-exoskeleton control based on muscular manipulability

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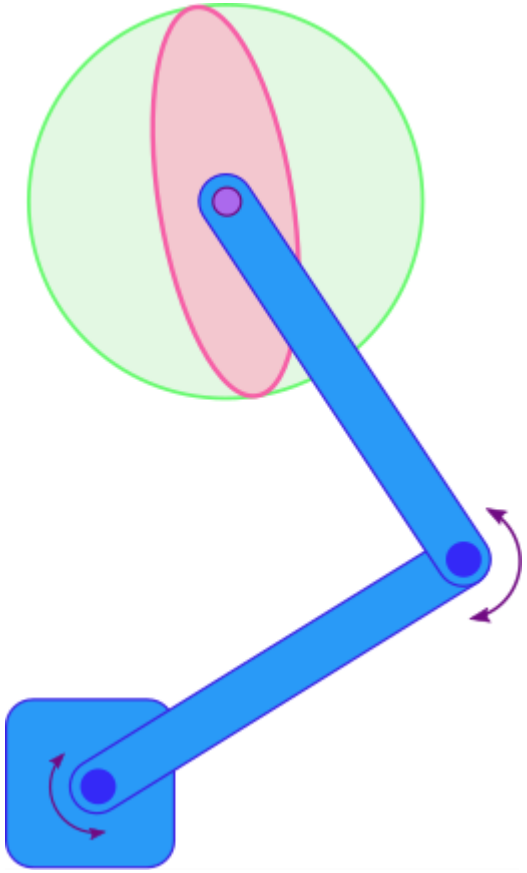
Poster number: 37

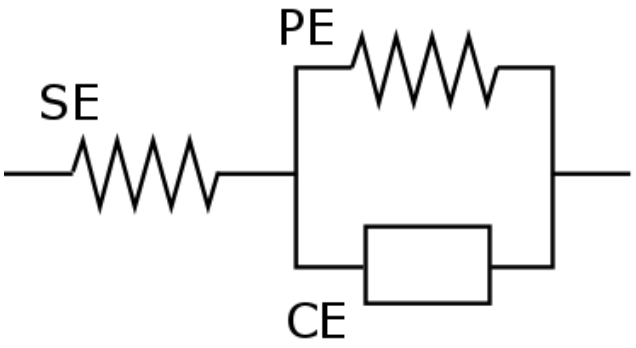
Manipulability

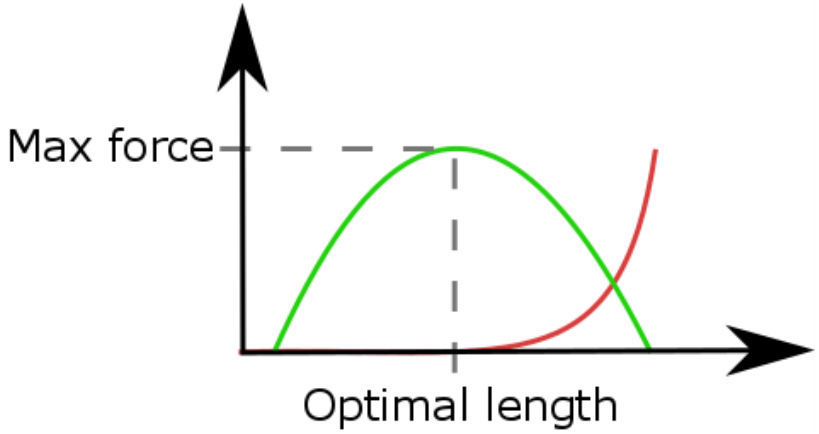
- Ellipse that describes how much force can be applied in any direction in current configuration
- Movements along major axis result in higher force
- Movements alongm inor axis result in smaller force



Muscular manipulability

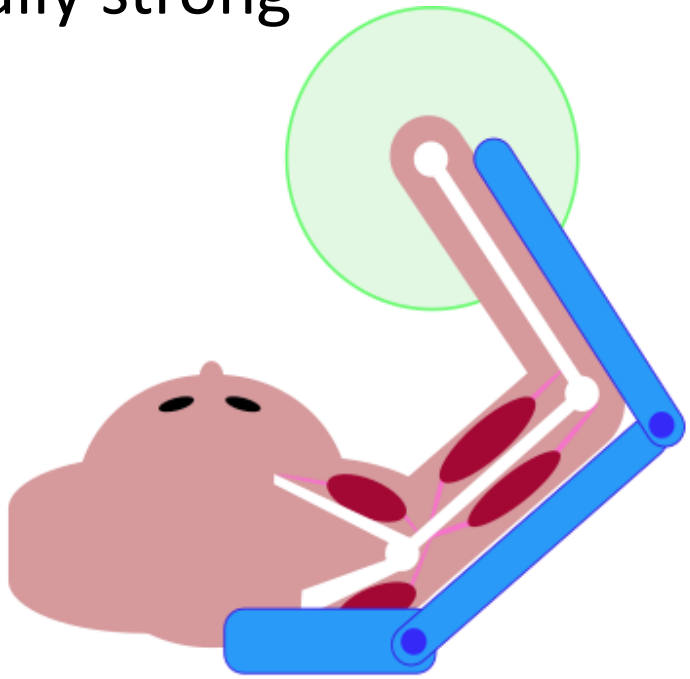
- Human muscle instead of electric motor
- Force of muscle is dependant on muscle length
- Modeled as a spring-damper system
- Contractile element, Paralel and serial elastic element





Exoskeleton control

- Exoskeleton supports movements in directions where the user is not naturally strong



Manipulability of both human and exoskeleton is now a circle