# Experimental Validation of Controllers For Human-Robot Cooperative Swinging of Complex Pendulum-Like Objects

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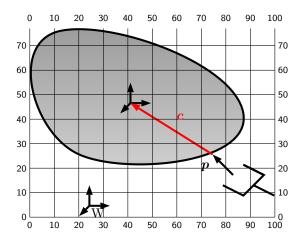


## **Content**





# **Task**







# Load Identification - State of the Art





# **Load Identification with Human**





### **Persistent Excitation**





# **Cooperative Excitation**





# **Tools**





# Time Schedule I





# Time Schedule II



#### References

