

Work presentation of

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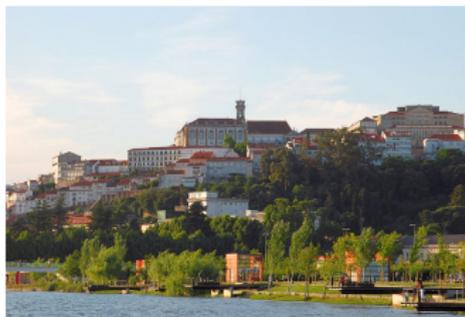
Introduction

My background:

- Master in Electrical and Computer Engineering (2008);
- Researcher at Institute of System and Robotics Coimbra (2009);

I will begin PhD studies in January 2010.

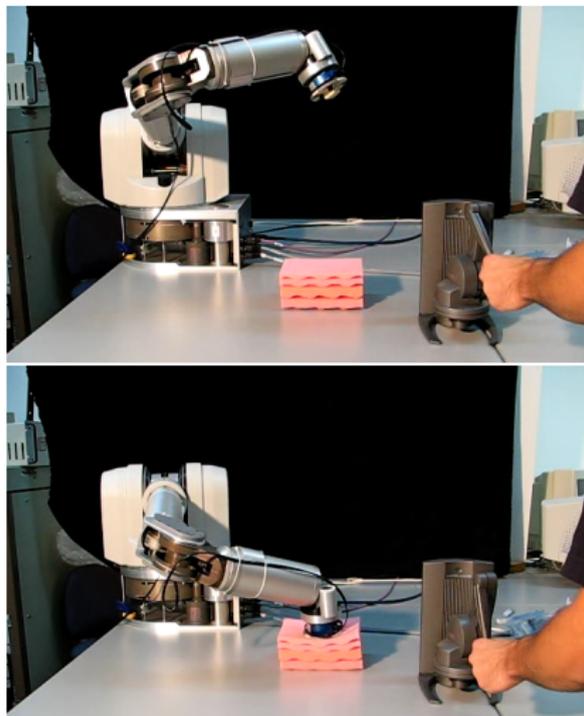
Coimbra:



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Acknowledgments: Rui Cortesão (my adviser) and Pedro Queirós (a colleague).

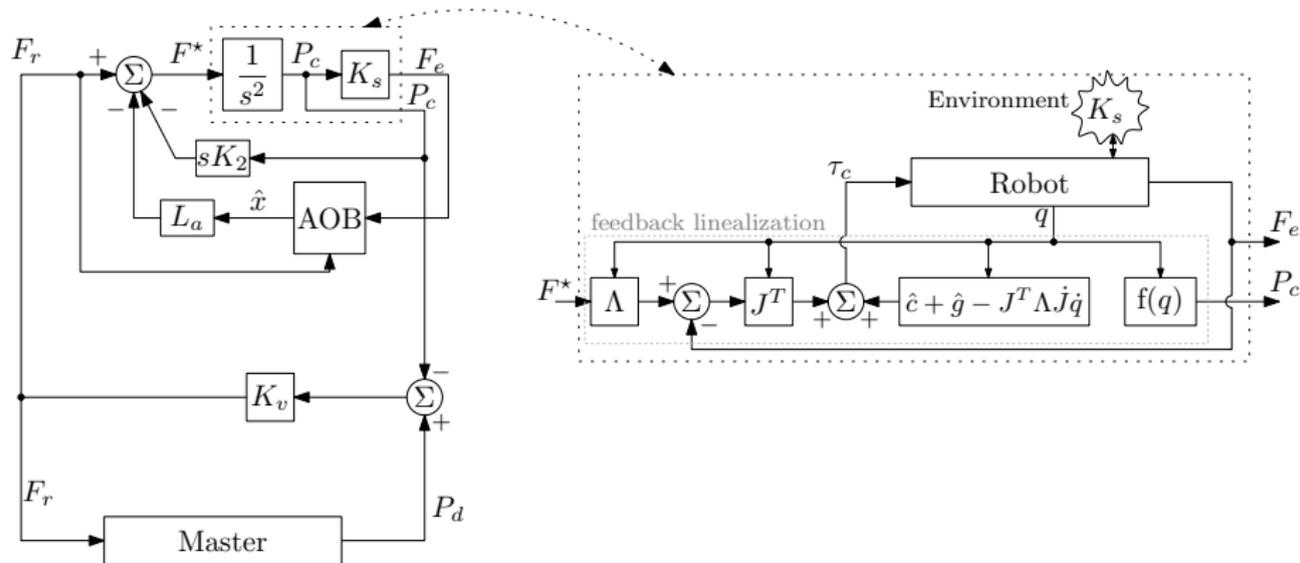
Telesmanipulation Control for Minimally Invasive Surgery



Control architecture features:

- feedback linearization
--> decoupled linear plant
- discrete state space control
- direct force control
- Active OBservers (Kalman filter enhancement)
- 3 DoF (6 DoF already implemented but not tuned)
- constant stiffness environment model
- haptic feedback (3 DoF forces)

Telemanipulation - Control Architecture



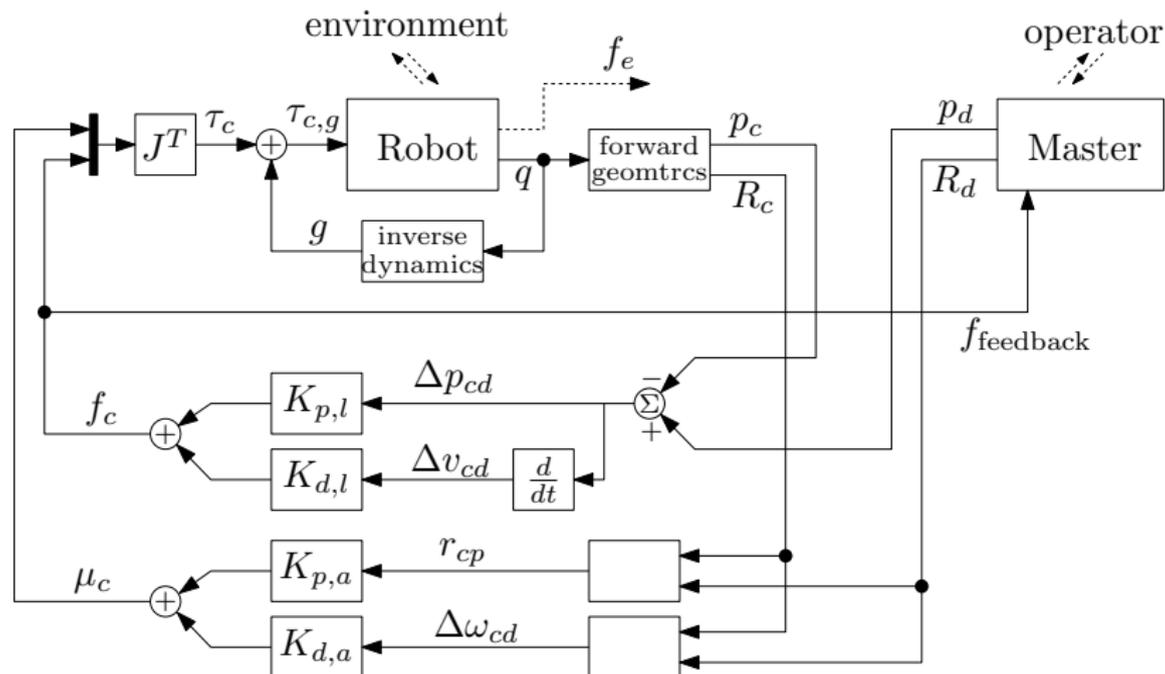
Tele-echography Preliminary Experiments



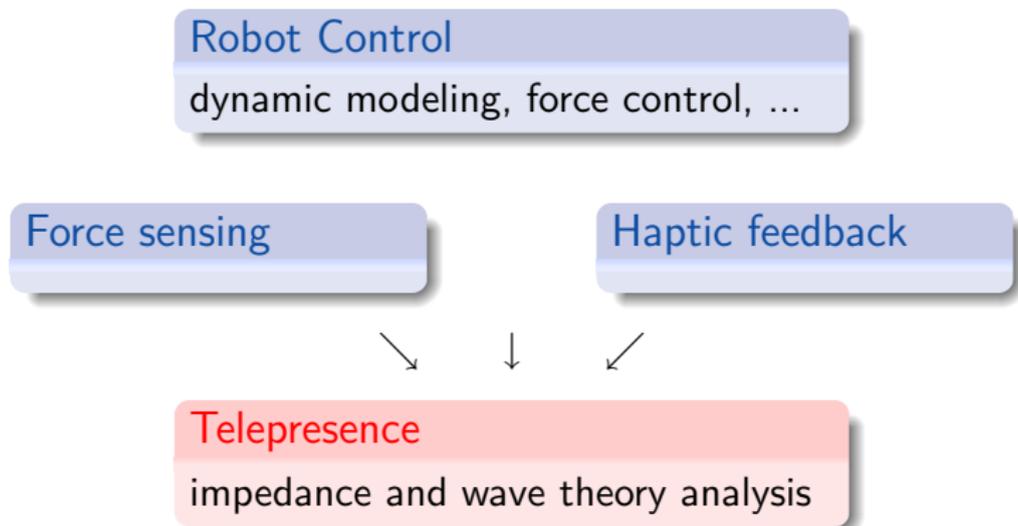
Control architecture features:

- gravity compensation
- discrete state space control
- indirect force control
- 6 DoF
- linear/angular position and velocity coupling between stations
- haptic feedback (3 DoF forces)

Tele-echography - Control Architecture



PhD directions



That's all.

Questions?

Suggestions?

Thank you!