14:20 - Development of a force myography sensor for PrHand prosthesis activation using fiber Bragg grating sensor and 3D printing

Felipe R. Cortes[1], *Marcelo E. V. Segatto*[1], *Camilo A. R. Díaz*[1]

[1] Telecommunications Laboratory (LabTel), Federal University of Espirito Santo (UFES), Brazil

The human-prosthesis interaction is an important factor for the implementation of any assistive device. Some works discusses how to use force myography (FMG) signals in the context of prosthesis, although, of particular interest is to use it in the upper-limb prosthesis PrHand. The sensor in conjunction with the reading system manages to send signals to contract and expand a linear motor as first step for prosthesis control. Aiming to improve its current state, making it easiest to manage for amputee people.

14:35 - Effects of noise location on the uncertainty propagation in fiber optic shape sensing

Leonardo Rossi[1], *Alberto Ramproni*[2], *Francesco Falcetelli*[2], *Gabriele Bolognini*[1], *Rafaella Di Sante*[2]

[1] INM Institute, Consiglio Nazionale delle Ricerche, Italy
[2] Department of Industrial Engineering, University of Bologna, Italy

The study of uncertainty propagation is crucial in fiber optic shape sensing. Measurement noise affects the performance of the reconstructed shape. Through a Monte Carlo simulation we demonstrate that the noise location has a significant effect on the accuracy of the reconstructed shape. The results suggest that noise injected at the beginning of the curve has a more detrimental effect compared to the same amount of noise injected in the last section of the curve.