State Sensing of Spinal Surgical Robot Based on Fusion of Sound and Force Signals

Meng Li[1,2], Xiaozhi Qi[2], Fengqing Guan[2], Haiyang Jin[3], Ying Hu[2], Wei Tian[4]

[1]Harbin Institute of Technology(Shenzhen), China
[2]Shenzhen Institute of Advanced Technology, CAS, China
[3]Shenzhen Broadcare medical robotics co. Ltd., China
[4]Shenzhen Beijing Jishuitan Hospital, China

- This paper proposes a state sensing method of spinal surgical robot based on multi-source information.

- The IMM and SVM is performed to train and identify the feature quantities of the sound and force signals.

- The effectiveness of the proposed identification method is verified and compared by using multi-parameter experiments.
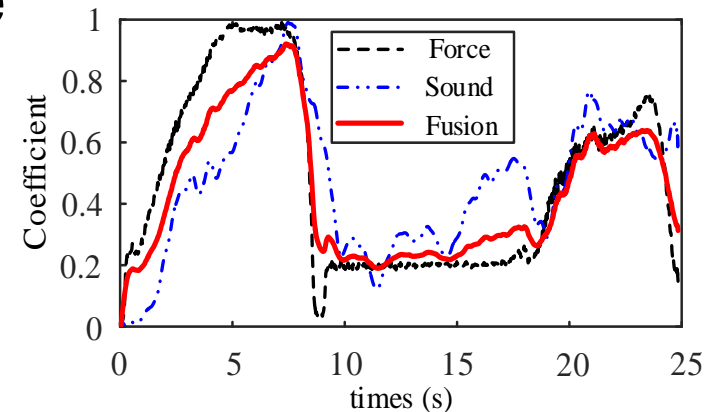
Fusion result of sound and force signals by IMM fusion method