ID31 microstation.
17 – 21 November - M. Lesourd

1.Introduction

These additional measurements give the acceleration responses of the microstation with hammer impact at selected locations. The effect of the control at the various stages was also investigated and show no major impact on the responses.

2.Procedure

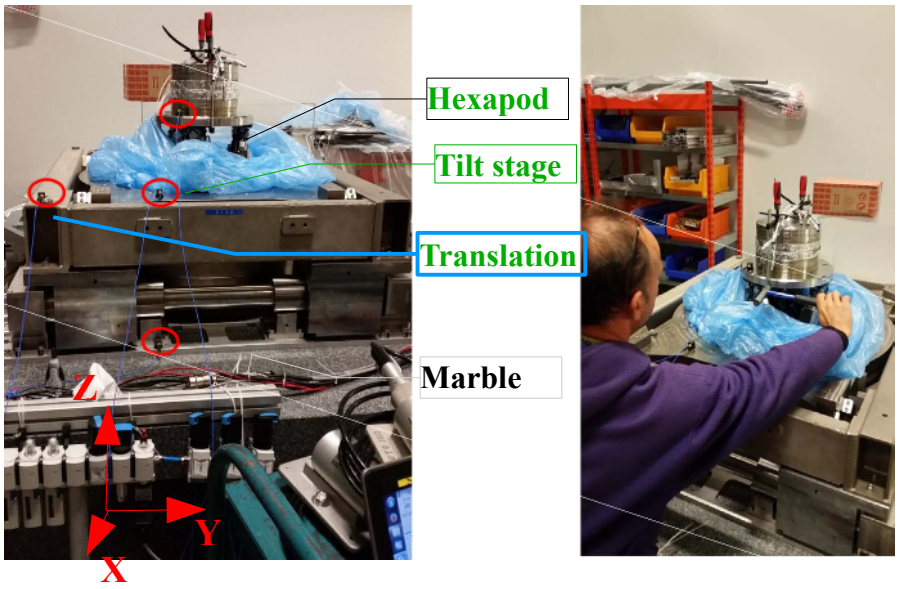


Fig.1 – ID31 Microstation mounted in ID31 technical room (ID31-13).

Tests performed with structure not glued to floor.

3D accelerometers glued on marble, translation stage, tilt stage and top of hexapod.

Response of the structure obtained with hammer impacts on marble and hexapod.

Bandwidth 1-→200Hz

(Here excitation on hexapod along X)

3.Results

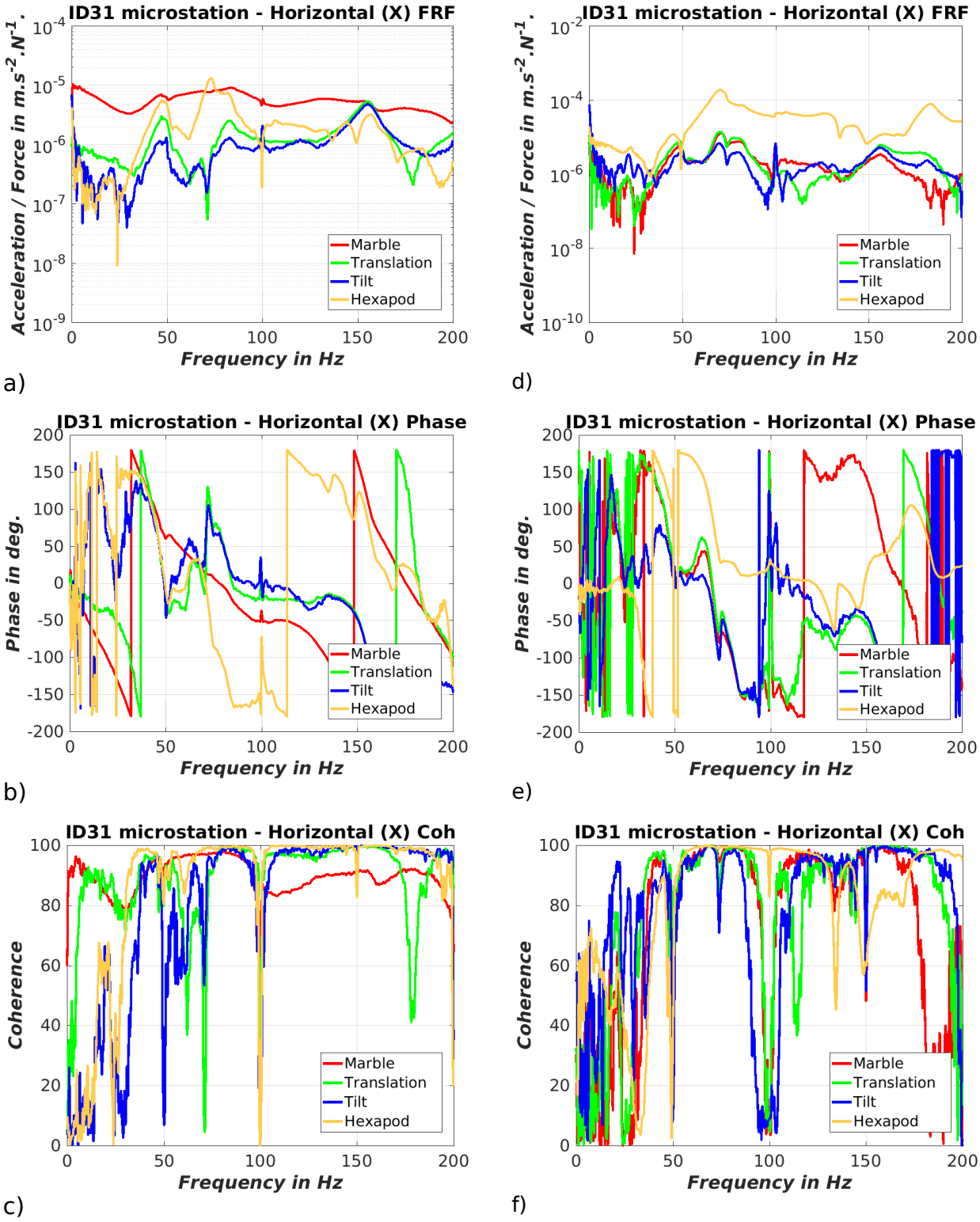


Fig.2. Frequency Response Function plots for ***Horizontal X*** *direction. Excitation with hammer on marble: Amplitude, phase and coherence a) b) and c). Excitation on Hexapod: Amplitude, phase and coherence d), e) and f).*

In X direction, global mode at 47Hz. Hexapod modes at 73Hz and 183Hz

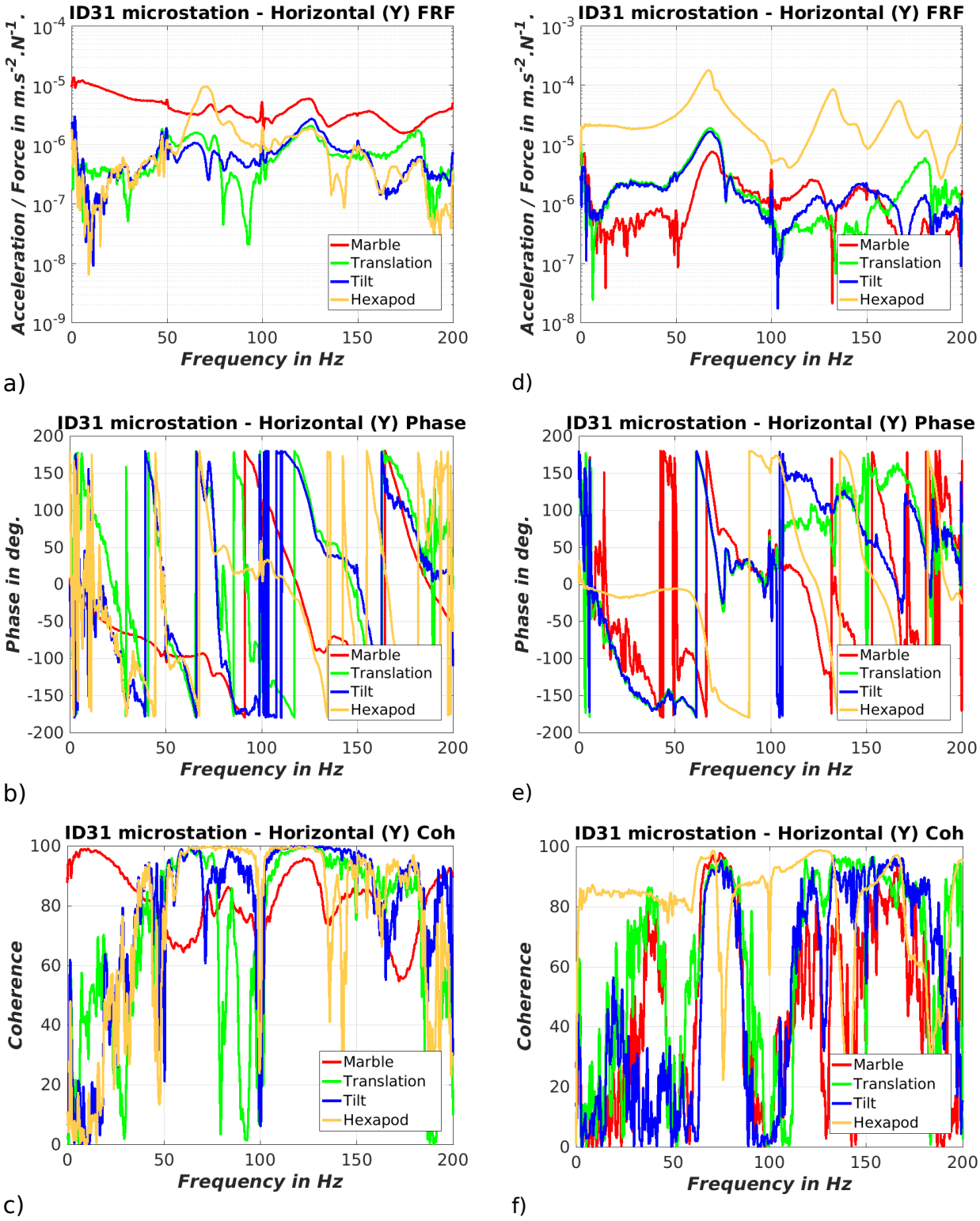


*Fig.3. Frequency Response Function plots for **Horizontal Y** direction. Excitation with hammer on marble: Amplitude, phase and coherence a) b) and c). Excitation on Hexapod: Amplitude, phase and coherence d), e) and f).*

In Y direction, global mode at ?Hz. Hexapod modes at 67Hz, 132Hz and 167Hz

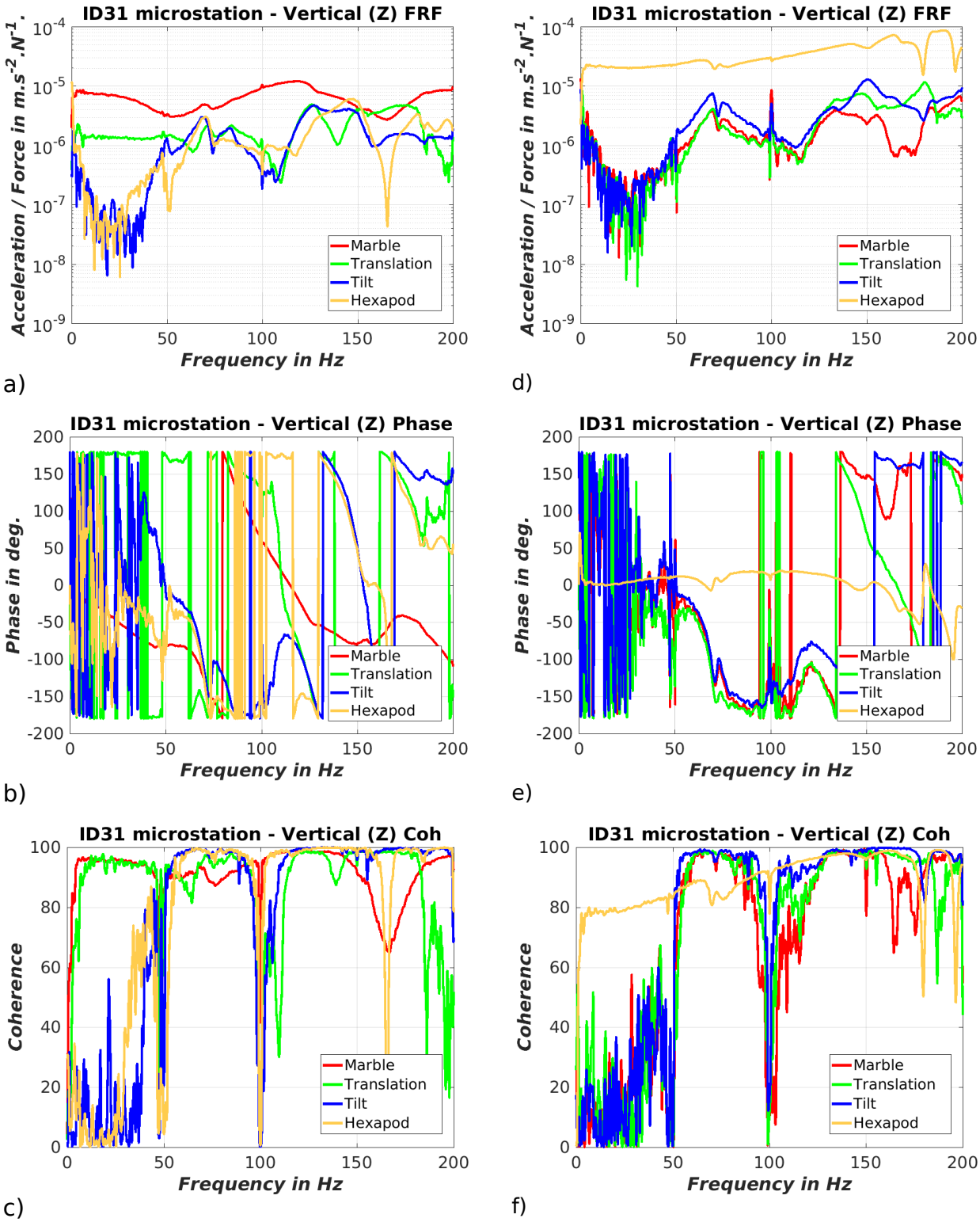
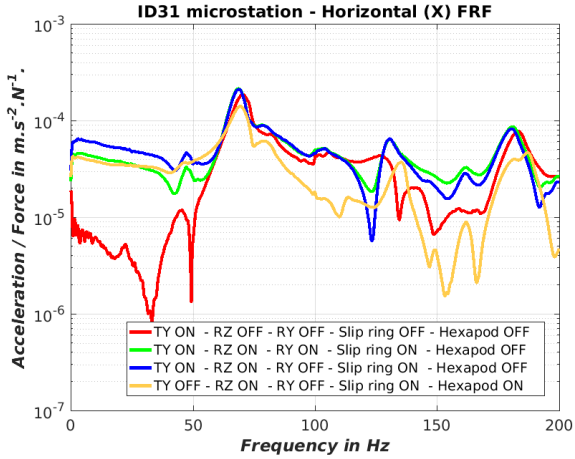
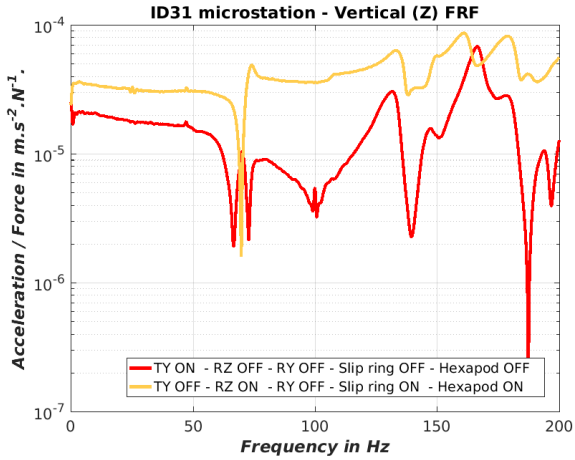


*Fig.4. Frequency Response Function plots for **Vertical Z** direction. Excitation with hammer on marble: Amplitude, phase and coherence a) b) and c). Excitation on Hexapod: Amplitude, phase and coherence d), e) and f).*

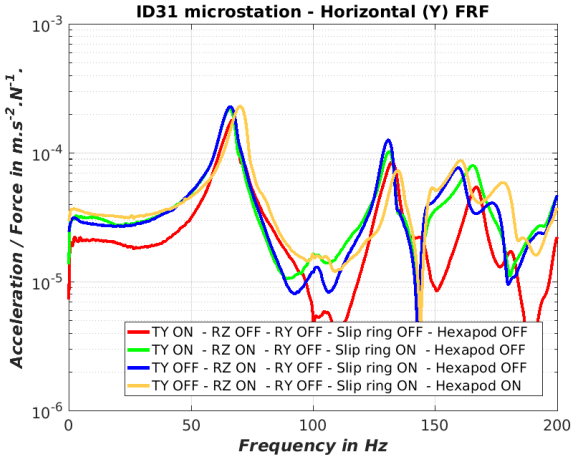
In Z direction, global mode at 69?Hz. Hexapod modes at 141Hz, 164Hz and 190Hz



a)



b)



c)

No major impact of the controls on the different stages of the microstation. There is a slight rigidity increase when the hexapod control is activated.

Fig.5. Frequency Response Function plots for the 3 directions. Excitation with hammer on hexapod: Horizontal (X) a), Vertical (Z) b) and Horizontal (Y) c).