Cryopump Baffle B&K measurements

Intro

In order to characterize the dynamic of the baffle structure before installation in chamber, a hammer test has been carried out.

Set up

The devices used for this measurement are described in the following document, page 3 of G1200784

During the measurement , the baffle was attached to a supporting structure through blades, as shown in Figure 3. **For the first test**, the accelerometer was mounted to one of the surface **of the "cone"**, as shown in Figure 1. **For the second test**, the accelerometer was mounted **to the "back plate"**as shown in Figure 2. The following youtube link shows a video of the second test
https://www.youtube.com/watch?v=7Jj5UGL52Dw

The position of the hammer impact is indicated by a blue circle in Figure1.

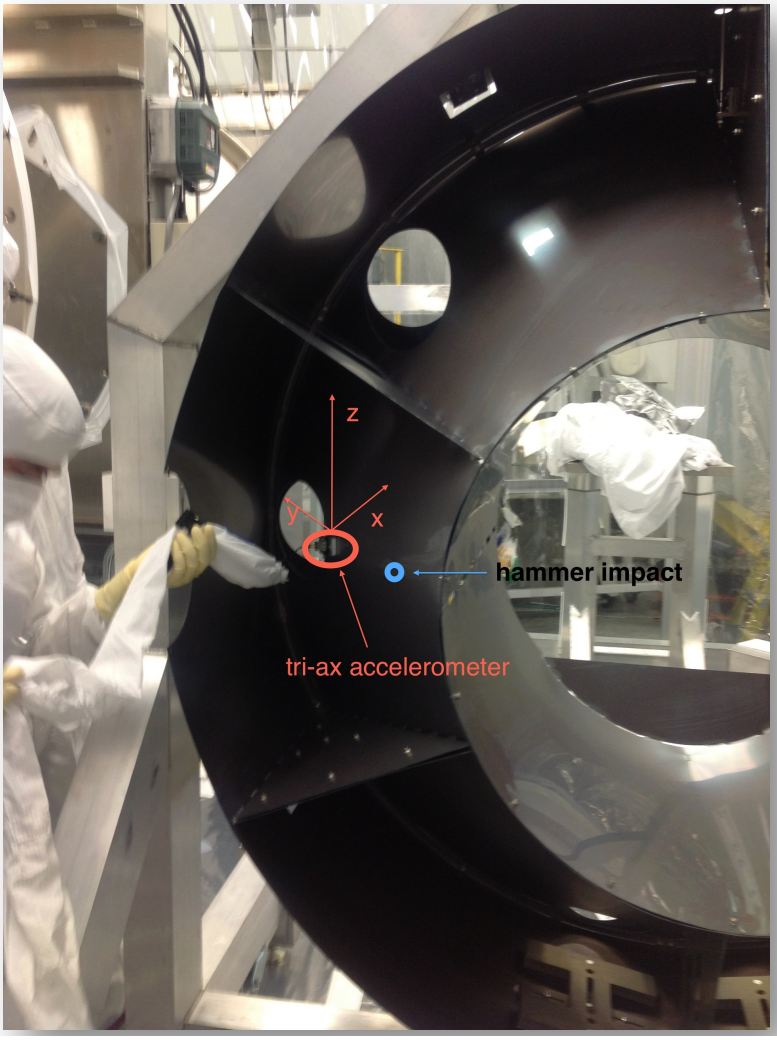

Figure 1 : CPB hammer test set up

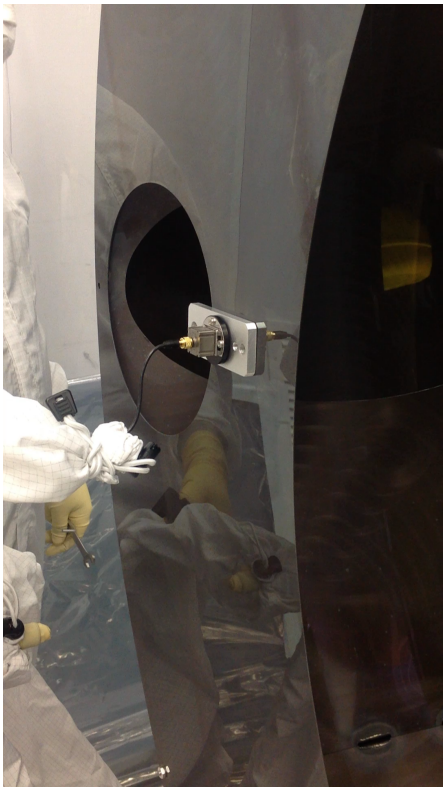

Figure 3 : CPB hammer test second set up

Figure 2 : Blades supporting the baffle

Measurements

Measurements have been processed with Pulse software. The instructions can be found in T1100331

Results

Figures 4 and 6 are showing the results of the two tests carried out. The coherence function is shown Figure 5 and 7. First test has its coherence close to 1 from 10 to 200Hz. Two resonances are clearly visible at 50 and 78Hz.

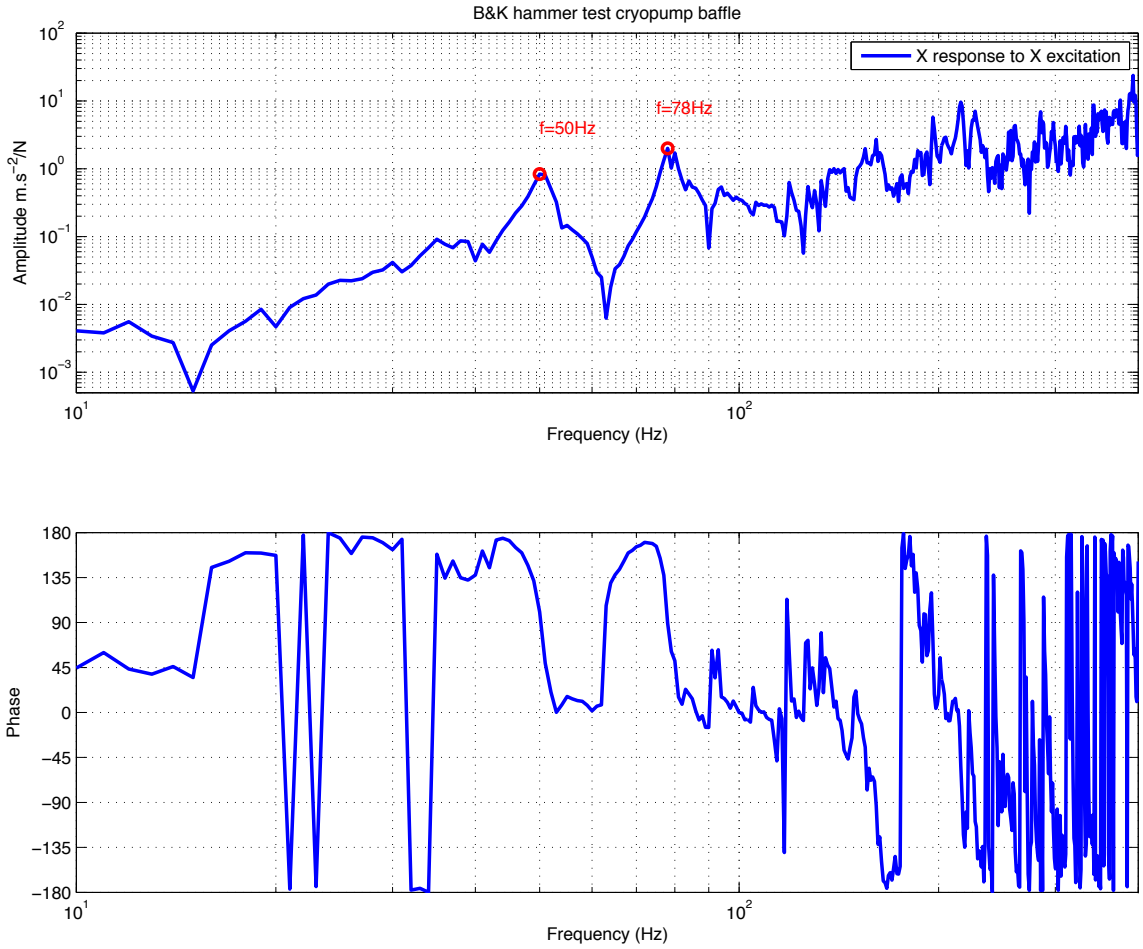

Figure 4 : Hammer test cone X resp to X excitation amplitude and phase

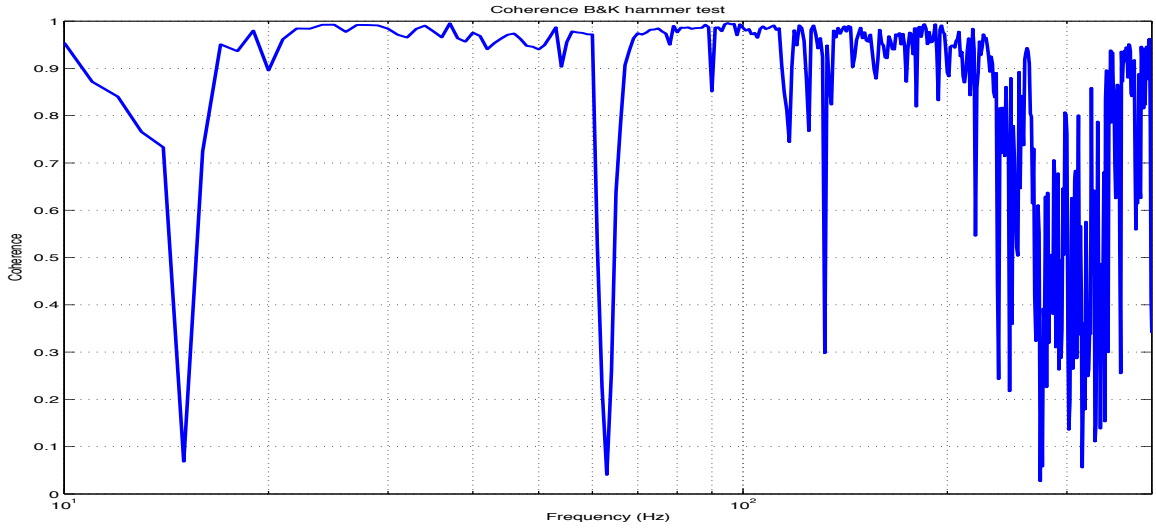

Figure 5 : Hammer test cone X resp to X excitation coherence function

For the second test, as the video shows, the plate was rattling when being hammered. The coherence drops from 90 Hz and data look as noisy as it sounded.

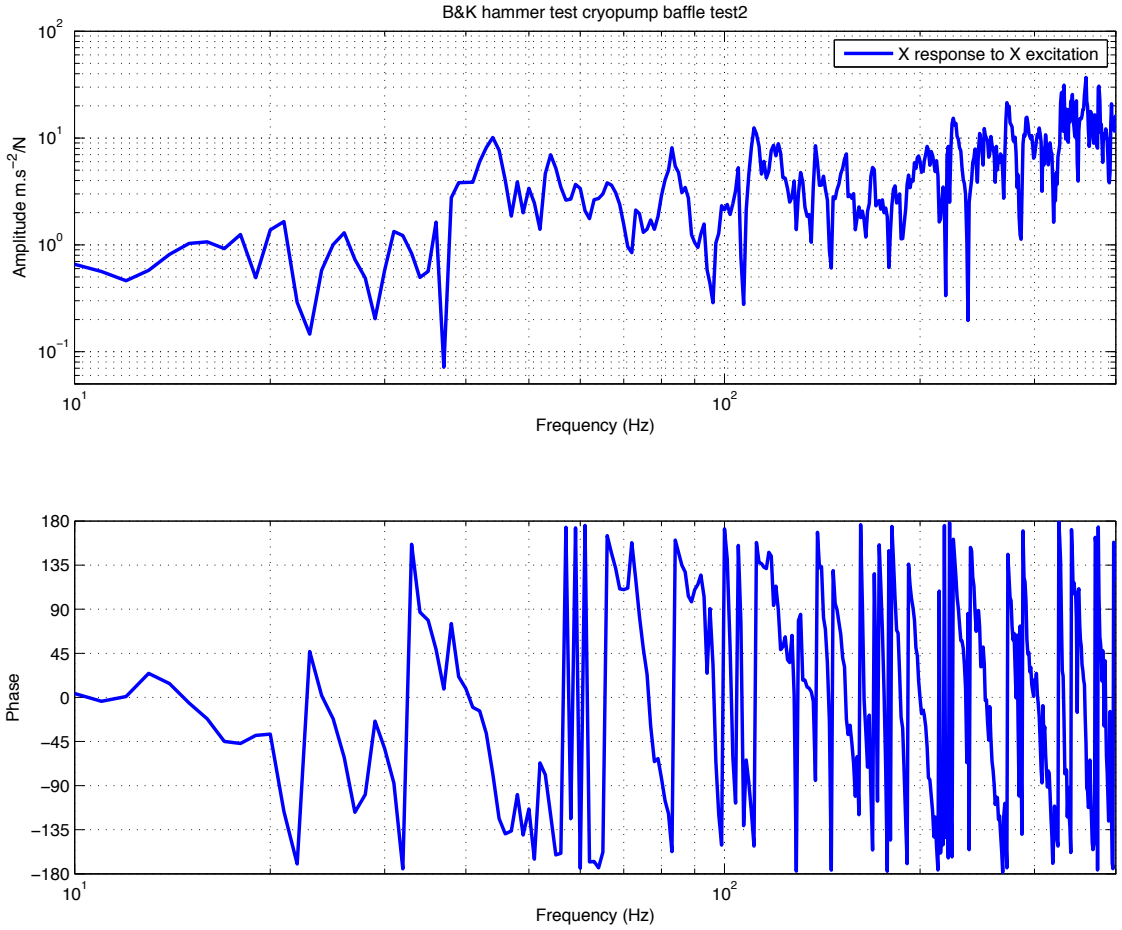

Figure 6 : Hammer test X resp to X excitation back plate amplitude and phase

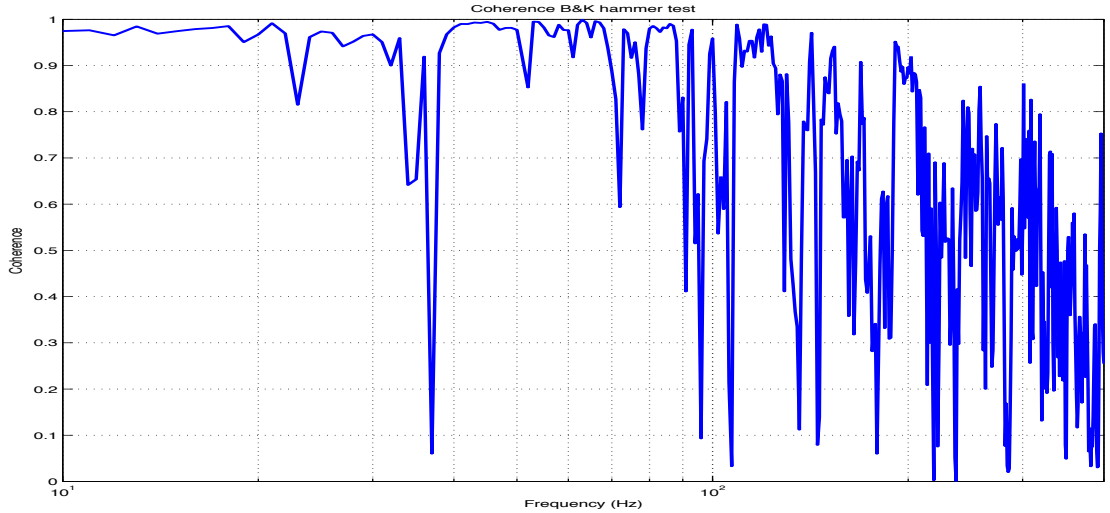

Figure 7 : Hammer test X resp to X excitation back plate coherence function