Figure S1: First bending mode of 1LO at 3.94Hz and 3.90Hz with free-free boundary condition knocked in X&Z-direction respectively
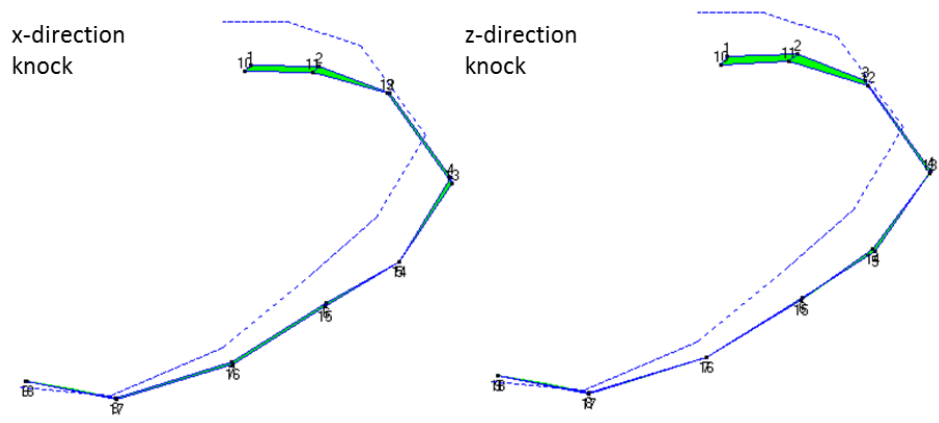
Figure S2: First bending mode of 2LO at 4.02Hz and 4.04Hz with free-free boundary condition knocked in X and Z-direction respectively
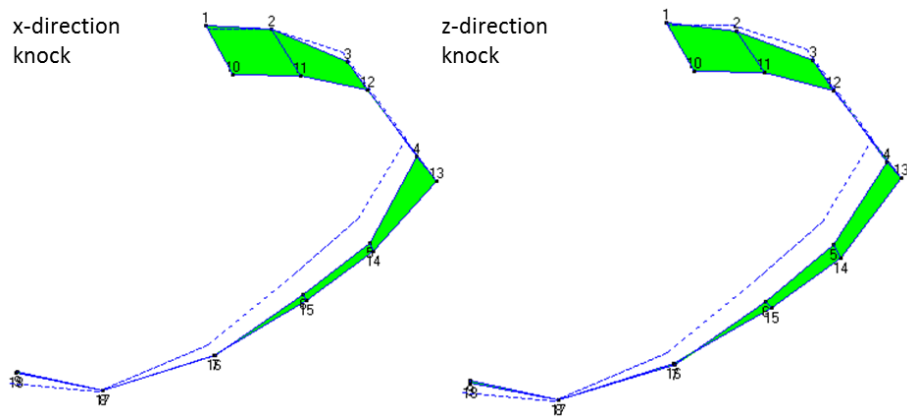
x-direction
knock

z-direction
knock

Figure S3: First bending mode of 3LO at 4.13Hz and 4.14Hz with free-free boundary
condition knocked in X and Z-direction respectively
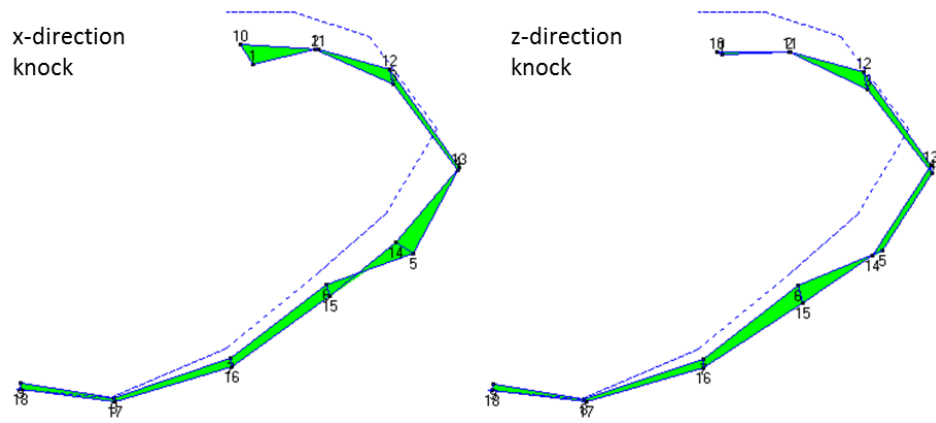
x-direction
knock

z-direction
knock

Figure S4: First bending mode of 4LO at 4.24Hz with free-free boundary condition knocked in X and Z-direction respectively
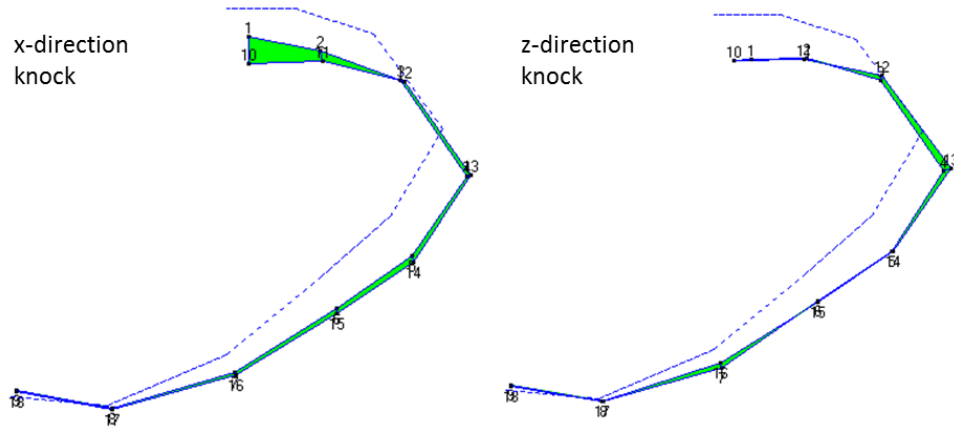
Figure S5: First bending mode of 5LO at 4.64Hz with free-free boundary condition knocked in x and Z-direction respectively
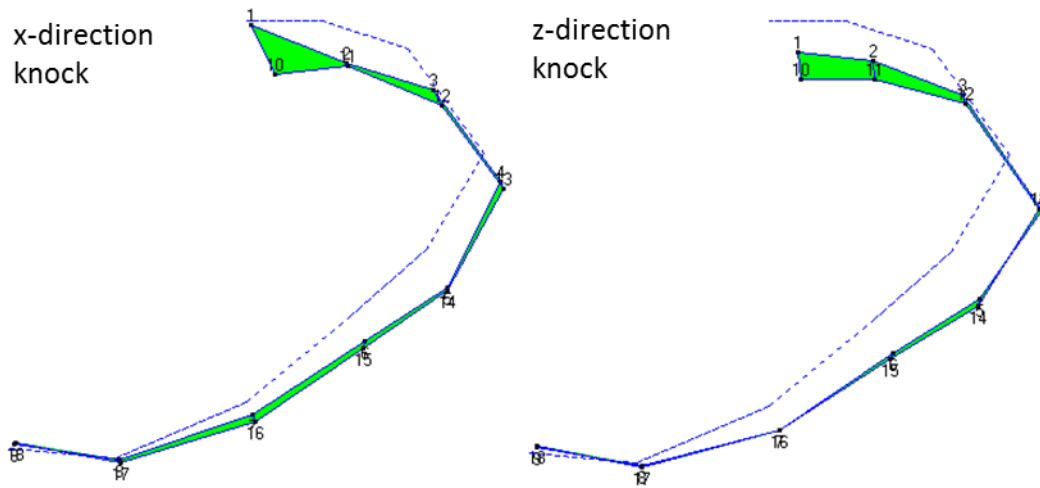
Figure S6: First bending mode of 6LO at 4.87Hz and 4.78Hz with free-free boundary condition knocked in X and Z-direction respectively
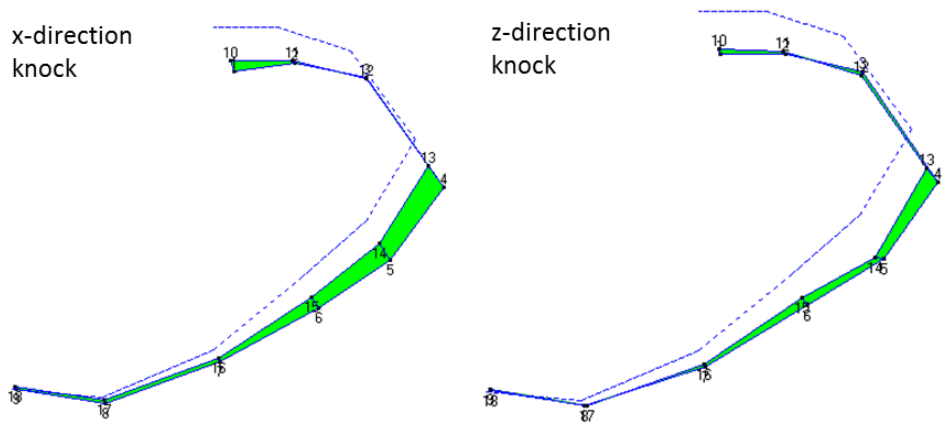
x-direction knock

z-direction knock

Figure S7: First bending mode of 7LO at 5.04Hz and 5.00Hz with free-free boundary condition knocked in X and Z-direction respectively
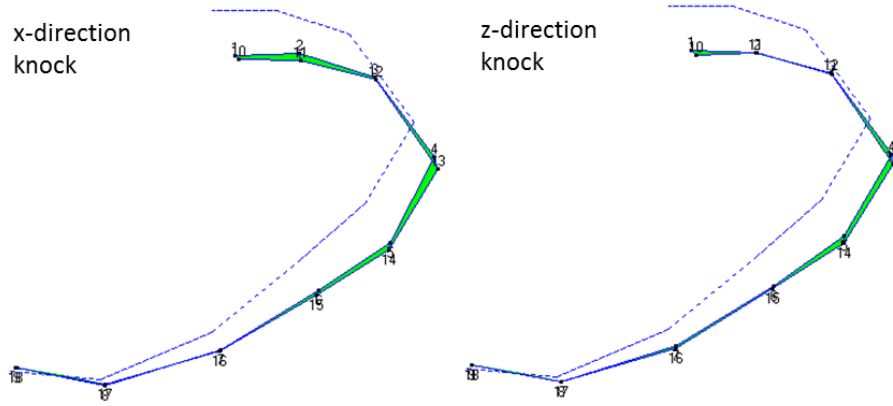
x-direction knock

z-direction knock

Figure S8: First bending mode of 8LO at 5.21Hz and 5.22Hz with free-free boundary condition knocked in X and Z-direction respectively
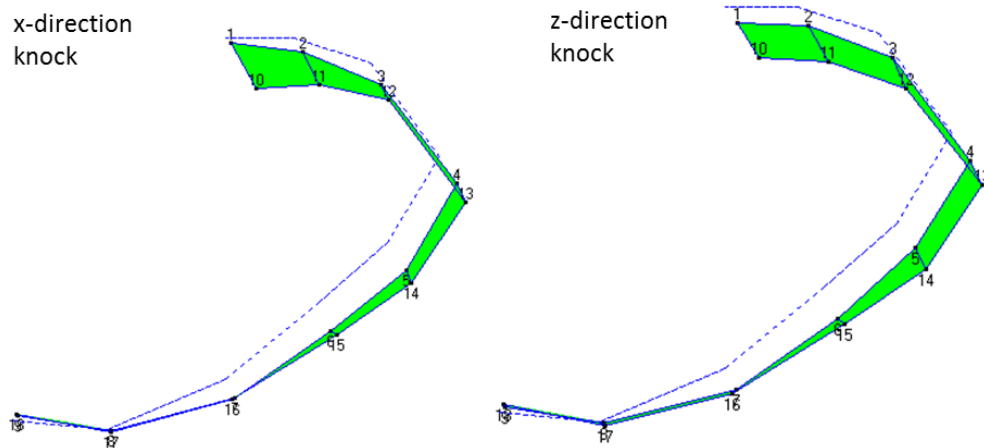
Figure S9: First bending mode of 9LO at 5.29Hz and 5.33Hz with free-free boundary condition knocked in X and Z-direction respectively