## Giant resonance tuning of micro and nanomechanical oscillators

Miguel V. Vitorino<sup>1,2</sup>, Simon Carpentier<sup>3,4</sup>, Alain Panzarella<sup>1</sup>, Mario S. Rodrigues<sup>2</sup>, Luca Costa<sup>1</sup>

<sup>1)</sup> European Synchrotron Radiation Facility, 71 Rue des Martyrs, 38000 Grenoble, France

<sup>2)</sup> CFMC/Dep. Fisica, Faculdade de Ciência, Universidade de Lisboa, Campo Grande, 1749-016 Lisboa, Portugal

<sup>3)</sup> Université Joseph Fourier BP 53, 38041 Grenoble Cedex 9, France

<sup>4)</sup> Université Grenoble Alpes, Inst NEEL, F-38042 Grenoble, France

E-mail: Corresponding luca.costa@esrf.fr

## **Supporting Information**

## Resonance shift of the high frequency oscillator in presence of static field

Figure S1 shows the frequency shift of the resonance of the *Olympus BL-AC10DS* NMO oscillator in presence of a static field. The frequency shift is much lower compared to the shifts obtained employing the proposed method as it is shown in Fig. 3(b) in the main manuscript.



Figure S1: Frequency shift, for the high frequency oscillator NMO, due to a voltage sweep from 60V to 70V.

## Phase signals

Here we report the phase between the excitation and the response of the oscillators that have been measured simultaneously to the amplitudes presented in Fig. 3 of the main manuscript.



Figure S2: Phase shift corresponding to the measurement in Fig. 3 of the main manuscript.