Abstract Submitted
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Investigation of acoustically dead materials for resonant ultrasound spectroscopy JONATHAN BETTS, BORIS MAIOROV, BRAD RAMSHAW, Los Alamos National Laboratory, ARKADY SHEHTER, NHMFL, ALBERT MIGLIORI, Los Alamos National Laboratory — Resonant Ultrasound Spectroscopy is used to excite mechanical resonances in solid samples. By precisely knowing the resonant frequency the complete elastic tensor of the sample can be calculated. In practice unwanted resonances are also created in the sample holder structure, these resonances are not related to the sample and can often confuse the measurement. To reduce this problem we have investigated the use of acoustically "dead" materials. We present data from various natural and synthetic materials. We also present RUS sample holder designs that can be used from <4K up to 700K and in magnet fields up to 45T. The elastic tensor of poly-crystal beryllium will be presented as a demonstration of the system performance.

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