

## **Elasticity measurement of silica glass under gas pressure**

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### **ABSTRACT**

The purpose of this paper is to demonstrate that resonant ultrasound spectroscopy (RUS) is applicable to conditions of gas pressure. A sphere of silica glass was measured under pressure of helium gas with a sample-gas-cavity container assembly. The pressure-induced shifts of frequency of six toroidal and two spheroidal modes were observed up to 200 MPa (2 kbar). The sample-gas-container system was analyzed as a three-layered shell structure, and the pressure derivatives of rigidity and bulk moduli;  $G'_0 = -3.5$  and  $K'_{S0} = -6.0$ , respectively, were obtained. These results are in good agreement with previous data.