

Abstract Submitted  
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**Strain mapping of diamond anvils under ultra-high pressure**  
WENGE YANG, HPSynC, Geophysical Laboratory, Carnegie Institution of Washington, GEOPHYSICAL LABORATORY TEAM — Microbeam diffraction is a powerful tool to estimate the strength of materials under high pressure in diamond anvil cells by measuring the lateral pressure gradient and sample thickness. More importantly the strain distribution inside of a diamond anvil can provide key information for diamond deformation and failure mechanism, which will guide the new design of anvils for next generation of anvils to achieve the maximum static pressure capability beyond the pressure record. In this talk, we will present the preliminary results obtained from submicron resolution diffraction data of anvils and metal films in DAC. The future application for nanobeam diffraction will be discussed.

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