

## Structural studies on liquids under high pressure and temperature at J-PARC

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Recent studies on liquids and amorphous solids under high pressure have revealed a variety of pressure-induced structural changes such as a first-order transition. Intense neutron beam available in J-PARC will open new opportunity for such studies. As one of groups in a project under Grant-in-aid for Scientific Research on Innovative Areas 'Earth Science Based on the High Pressure and Temperature Neutron Experiments', liquid group conducts unique study on 'Structural change in water and other liquids under high pressure' using a dedicated high- pressure neutron-scattering beamline. By collaboration between researchers on high-pressure liquids and specialists in neutron scattering of disordered materials, reliable methods for measurements and data analysis will be developed. The targets are chemically simple systems such as water for which neutron is an irreplaceable probe. Our final goal is novel discoveries in pressure-induced structural changes in liquids. In this talk, both advantages and difficulties in neutron studies on liquids under pressure and expected results will be reviewed.

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