

# Spatial and temporal heterogeneity of Kohlrausch–Williams–Watts stress relaxations in metallic glasses

Osaka University, Department of Mechanical Science and Bioengineering,

**Akio Ishii**

- A molecular dynamics (MD) stress relaxation simulation for metallic glass was performed to confirm that the time dependency of stress relaxation conforms with the Kohlrausch–Williams–Watts (KWW) equation.
- The time dependency of stress relaxation were derived as a mode-averaged decay function, which expresses spatial and temporal heterogeneity.
- Both the results of simulation and calculation reproduce the KWW relaxation form and are in good agreement, confirming the spatially and temporally heterogeneous nature of KWW relaxation.
- The heterogeneity of the stress relaxation of metallic glass is determined by local stress changes caused by microscopic local plastic deformation.

