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Shock response of nanoporous magnesium by molecular dynamics simulations

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Highlights

- Competition between two mechanisms of void collapse in np-Mg is revealed.
- Thermal dissipation and stress attenuation are captured in void collapse of np-Mg.
- Spall strength of np-Mg decreases with shock velocity under the same void size.
- Large size void has a significant weakening effect on spall strength of np-Mg.
- Hugoniot curves of Mg are obtained and consistent with experimental data.

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