Anomalous behaviors of a single-crystal Nickel-base superalloy over a wide range of temperatures and strain rates

Jianjun Wang , Wei-Guo Guo , Yu Su , Ping Zhou , Kangbo Yuan

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Highlights

- The DD407 superalloy tested over a wide range of temperatures and strain rates.
- The anomalous peak of flow stress and tension/compression asymmetry observed.
- Temperature-dependent rupture property of the superalloy investigated.
- The strengthening and failure mechanisms discussed.
- A constitutive model developed to account for the experimental observations.