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**Experimental Study on Dynamic Mechanical Properties of 30CrMnSiNi2A Steel.** FENGLI HUANG, WEI YAO, HAIJUN WU, LIANSHENG ZHANG, Beijing Institute of Technology — Under dynamic conditions, the strain-rate dependence of material response and high levels of hydrostatic pressure cause the material behavior to be significantly different from what is observed under quasi-static condition. The curves of stress and strain of 30CrMnSiNi2A steel in different strain rates are obtained with SHPB experiments. Metallographic analyses show that 30CrMnSiNi2A steel is sensitive to strain rate, and dynamic compression leads to shear failure with the angle  $45^\circ$  as the small carbide which precipitates around grain boundary changes the properties of 30CrMnSiNi2A steel. From the SHPB experiments and quasi-static results, the incomplete Johnson-Cook model has been obtained:  $\sigma = [1587 + 382.5(\bar{\epsilon}^p)^{0.245}][1 + 0.017 \ln \bar{\epsilon}^*]$ , which can offer parameters for theory application and numerical simulation.

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