**Zhou, H., Wang, Y.-Y.,** and Nanney, S., 2018, Burst Pressure of Wrinkles under High Longitudinal Strain, Proceedings of the 12th International Pipeline Conference, Paper No. IPC2018-78804, September 24-28, 2018, Calgary, AB, Canada.

## Abstract

Wrinkles may form in pipelines experiencing high longitudinal strains in areas of ground movement and seismic activities. Current assessment procedures for wrinkles were developed and validated under the assumption that the predominant loading was internal pressure and that the level of longitudinal strain was low. The impact of wrinkles on the burst pressure of pipes under high longitudinal strain is not known. This paper describes work funded by US DOT PHMSA on the assessment of burst pressure of wrinkled pipes under high longitudinal strain.

Both numerical analyses and full-scale tests were conducted to examine the burst pressure of wrinkled pipes. The numerical analysis results were compared with the full-scale test data. The effect of wrinkles on burst pressure were discussed. The biaxial loading conditions in the pipe were found affect the burst pressure of wrinkled pipes.