













the reduction amplitude of critical gas velocity with vortex tool was defined according to the Turner model. Through analysis, it is found that the reduction amplitude increased with the helix angle, but decreased with the growth in hub diameter. The helix angle has a greater impact than the hub diameter on the reduction amplitude. Hence, priority should be given to the helix angle in the design of vortex tools.

## ACKNOWLEDGEMENTS

This paper is made possible thanks to the generous support from the National Natural Science Foundation of China (Grant No.: 61572084, 61772086) and the 13th Five-Year Plan National Major Projects (Grant No.: 2016ZX05056004002, 2016ZX05046004-003), as well as the valuable advices from editors and reviewers.

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