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INITIATION AND STABILIZATION OF OBLIQUE DETONATION WAVE IN A SUPERSONIC WIND
TUNNEL**Abstract**

The oblique detonation wave engine (ODWE) is one of new concepts of future supersonic and hypersonic propulsions. In past decades, experimental investigations on oblique detonation wave (ODW) is primarily through shock tubes and high-speed projectiles. However, the test and observation time is very short for both of these two experimental techniques. Consequently, the long-time behavior of stabilized oblique detonation wave cannot be observed unless the stabilization is realized in a wind tunnel. Unfortunately, relative work is still not reported so far as we know. In this paper, we realize both the initiation and long-time stabilization of an ODW in a supersonic wind tunnel for the first time, which are not easy tasks. We report relative details and key points of the experimental techniques, and discuss the controlling factors of ODW's initiation and stabilization in a supersonic wind tunnel. All above are precious experiences for ODW research.